

Submarine Life in WWII

*The Inside Story of My Life Aboard The USS Drum
SS-228*

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USNR — 1942-1946**

- **The “new” electric torpedoes that didn’t work.**
- **Amelia Earhart – the secret story of what happened!**
- **The “friendly” planes that bombed us more than the Japanese did!**
- **We were trapped in shallow water – surrounded by destroyers – we knew our number was up.**
- **What it’s really like under a heavy depth charging.**
- **Man overboard! Uh, oh!**
- **Our July Fourth celebration shelling of Fais Island.**
- **We’ll never forget the sugar, onion, and Spam disasters.**
- **Wow! Two weeks of rest camp! Ugh, it’s on Majuro in the Marshall Islands – again!**

The next time you are anywhere near Mobile, Alabama, please allow a couple of hours to visit the Drum, which is tied up next to the battleship Alabama in Battleship Park. If it has been repaired after the recent hurricane damage you should get a good inside look at where I spent my time from 1943 until near the end of the war in 1945. My bunk was the bottom one, just aft of the hatch going into the after battery.

Not long ago the remaining survivors of the Drum crew were invited for a cruise on the nuclear attack submarine Drum SS-677. We went out and were shown every part of the boat. It was fascinating, and we "old salts" had a great time kidding the youngsters of the crew. I even had my turn at the helm, flying the boat 800 feet under the Pacific Ocean. It was like flying a plane. A great big, lumbering plane. Like the time I had an afternoon on an Air Force simulator, flying a C5B (like a 747), making take offs and landings at several airports under weather conditions right down to 100-foot visibility! Yes, I made fine landings, though my only previous experience had been flying small private planes.

**This book was written, edited (including 17 errors for nit pickers),
set in type, put into pages with PageMaker and a Macintosh
Performa computer.**

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Life on a Submarine in WWII

Though I think I've bought and read just about every submarine book published, they all seem to be completely occupied with the action part of the war, with little said about what it is like to live and work on a day to day (and night) basis on a submarine. It's certainly different from anything else I've experienced in my life, and probably should be chronicled.

Despite the heavy attention to action in the submarine books, life on a submarine is best characterized as boring. Well, 99.5% of it was boring—but that other point five percent! You see, our war patrols lasted about two months and during that period we had to be constantly alert for trouble—like finding something we could attack, or escaping from something interested in attacking us. The reality was that there were very few instances of actual excitement to fulfill the pent-up expectation. On an average patrol run we had maybe ten or twenty hours of excitement spread over the two month period. That seemed awfully thin. Oh, sometimes we'd have more than that. Now and then there was a lot more than we really wanted—like being depth charged.

We were on a four on, eight off schedule. During the eight hours off duty we would sleep, eat, and play cards—mostly pinochle. Since there was no way to get eight continuous hours of sleep we would try to split our sleeping up with maybe six at one time and a couple during the other off duty period. There was little difference for most of us between night and day since we had only one little window on the world—our periscope.

We discovered a funny thing about living on this sort of schedule. When we found ourselves beginning to get chronically sleepy we would have to count back to see whether we had been under- or over-sleeping, for the physical sensation within our bodies was the same. Too much sleep made us feel just as tired as too little when we had no sun for a reference.

Before going on duty (we called it going on watch) at noon I'd eat an early lunch. The crew's mess on a submarine holds up to 24 at a time, so, with a crew of around 70, plus officers and chiefs, with their own mess in the forward battery compartment, we had to eat in relays. I'd eat the first lunch mess and then relieve the watch about ten minutes to noon, allowing the previous watch to get into the second mess serving. Mess is a poor word for it, really, for the food was excellent most of the time.

The cook would even have a midnight snack ready for those going on or off watch at that time. Being a better than average eater, I would often take a plate full of sandwiches on watch in the conning tower, plus a big pitcher full of iced orange juice. The canned California orange juice was pretty good, particularly as com-

pared to the Florida juice, which was much more bitter. My favorite sandwiches were tunafish mixed with Hellman's mayonnaise and sweet pickle relish—a recipe I learned on the *Drum* and still love. We could put something like that together any time we wanted. We really had remarkable freedom in the galley.

Being the electronic technician, the first few days of a war patrol, when we were heading out to go on station, a ten day to two week trip, I usually spent trying to get my radio, radar and sonar equipment back into working condition. Since the whole purpose of going to a submarine base or a sub tender for a "refit" was to install new equipment, fix up the old, and generally refurbish the submarine, one might expect that everything would be working perfectly by the time we were ready to leave. One would often be mistaken.

I remember pulling out of Majuro in the Marshall Islands for a patrol in December 1944. We had the heartening news that the five previous submarines refitted by our tender (the Gilmore, as I recall) had already been sunk. I wasn't too surprised when, as we headed toward Japan, I had a chance to check things out and found that nothing worked. I don't mean things didn't work right, they didn't work at all! First I got to work on the radio transmitter so we would be able to keep in touch with ComSubPac (Commander-Submarines-Pacific) in Pearl Harbor, and perhaps pass the word if we ran across a convoy and needed some help from other submarines. I found a bad capacitor in one of the amplifier stages and a shorted antenna. We couldn't send or receive! I fixed those problems and then got busy on the underwater sound equipment (sonar) to find out why it wasn't working. I found that the connector going to one of the sound heads had been jammed on so carelessly that several of the contacts had been broken off. The radar took longer to fix. It had no power. The problem turned out to be the brushes in the motor generator, which had been put in backwards. I don't know if all this was intentional sabotage, or just the result of incredible incompetence, but the end result was that until I got things fixed we were all alone out there with no ears, or mouth, and no eyes beyond what we could see with our binoculars. It's no wonder the five earlier subs had been lost so quickly. I had everything back in working order in a couple of days, but I knew every circuit in every piece of equipment intimately. Not many techs would be able to find the problems I discovered as quickly.

All the repairs had to be done in addition to my regular watches. I started out on the twelve to four watch. This wasn't bad from noon until four in the afternoon, but was a good deal less than choice from midnight until four in the morning. My watch duty was in the conning tower where I rotated with two other chaps between the wheel (steering the boat), watching the radar when we were on the surface, listening on the sonar when we were submerged, and looking through the periscope for possible targets.

After getting off watch at four in the morning I'd generally head off to my sack and sleep until the first or second breakfast call at 8. That would give me almost four hours of sleep. After breakfast I'd work on designing and building some gadget or making sure our equipment was in top shape until time for lunch and my next watch. After the afternoon watch I'd usually play pinochle in the crew's mess until chased out so they could set up for dinner. After dinner I'd sack

out again from about 8-11:30—and then the whole thing would start over again.

Luckily there weren't a lot of crew members who were as apt to have their mind wander while on watch as I. The officers up on the bridge would get very annoyed with me when we were on the surface and I was on the wheel for I'd get to thinking about something else and the first thing you know we'd be 100 degrees or more off course. Lt. Eldridge would call down on the intercom and ask me to come topside and take a look at the wake I was leaving. You see, there was this little clock with a hand which moved back and forth over the compass, helping the helmsman steer a zig-zag course, thus making it more difficult for enemy submarines to torpedo us. This also made it difficult for the officer of the deck to know exactly what bearing I was supposed to be steering at the moment—a fact I took advantage of constantly. But the clock mechanism never put us more than about 45 degrees off course, so when we got out to 90 degrees or so they knew Green was on the wheel again.

Inattention such as this was far more hazardous to our health when watching the radar screen. It only took a few minutes for a plane to swoop over the horizon and drop a bomb—and we needed the better part of one of those minutes to get under the water. To solve this difficulty I built a gadget out of spare radar parts which would sound off when a radar echo was detected. It took me quite a while to get this working because I had to design it to ignore the random radar echoes from nearby waves and only alert me when an actual target was detected. I found this very handy because watching the radar scope for any length of time tended to hypnotiz-z-z-me.

After the war, while working as an project engineer for Airborne Instrument Laboratories, I got involved with a project to develop a moving target indicator for the Air Force and my experience on the *Drum* was a big help. Remind me to tell you sometime about the incredible wastes of government money I saw while working there. I witnessed millions being absolutely wasted.

Gambling was not allowed on the *Drum*, so we mostly played Cribbage, Acey Deucey and four-handed (partner) Pinochle. We ran tournaments during each war patrol. Pinochle was the most popular game, by far. In fact it was rare to pass through the crew's mess at non-feeding times and not see a game going strong.

When I first came aboard I didn't know how to play pinochle, so I entered the cribbage and Acey-Deucey tournaments. Since my family had played games in the evenings most of my life I was an expert player at almost anything. I'd been brought up on cribbage, casino, Russian Bank, hearts, bridge, and so on. The first two patrol runs I won both tournaments. Then I learned to play pinochle and won all three. They stopped bothering to have tournaments.

While I was going to the Radio Materiel School on Treasure Island I played two-bit poker every evening with the chaps who bunked near me and won enough so I didn't have to draw any pay for the entire six months I was there. And that included having enough money for my liberties in San Francisco, and even a couple sets of tailor-made uniforms.

Taylor-mades? If you've seen the ill-fitting baggy stuff the Navy issues you can understand why a tight-fitting uniform was preferred for liberty in town..

Clear the bridge!

On patrols where we were able to be on the surface most of the time one or two crew members would be permitted to go topside and stand on the cigarette deck and watch the Pacific Ocean roll by. You couldn't have very many up there because there was always the chance that a plane would suddenly attack and we'd have to submerge. When the "Clear the bridge" shout came, the lookouts had things organized so they would grab their night binoculars, climb down from their watch stations up on the periscope shears and jump through the hatch into the conning tower in time to close the cover just before the water came washing over the bridge. You could barely squeeze two extra men into the few seconds involved and without taking water down the hatch into the conning tower, or getting someone stomped on who didn't jump out of the way fast enough. When the diving alarm sounded the men on watch would drop down to the deck in two bounds, then jump down the hatch in one more movement. Woe to anyone in the way.

Once we managed to leave someone topside when we submerged. I remember because I was in the conning tower operating the radar and the last man down was Watson. He slammed the hatch shut and called for a pressure in the boat—that makes sure that all hatches and vents were closed properly. Suddenly he heard someone rapping on the hatch! Too late to open it now. Fortunately this was a practice dive and not an emergency, so he shouted to the captain, to cancel the dive as fast as he could. It took several minutes for us to get back up on the surface and open the hatch—and let a soaking wet, cursing seaman come down. He'd missed hearing the diving alarm and gotten down late. The boat had gone almost completely under and he'd climbed to the top of the periscope shears to keep from being swept away. He was lucky for it would have been almost impossible to find him swimming around in the middle of the night in the Pacific Ocean.

Watson, who was the first down the hatch, was supposed to count those coming down, to make sure no one got left topside. He missed his count this time.

Most of us stayed down inside the sub, where we soon lost all track of day or night. We spent a good part of some war patrols submerged all day, surfacing at night to run our diesel engines, recharge our batteries, and freshen our air. These were trips where we were operating near Okinawa, Japan, Palau, and other Japanese strongholds. Routine. We watched and watched, waiting for something to happen. A discouraging number of our contacts turned out to be our own submarines. There seemed to be more of them around than Japanese ships.

I remember one very dark night when I got a target on the radar. A ship. Not very large. We cautiously closed in, tracking it. The return on my radar screen was like that of a submarine or a spitkit, as we called the small Japanese fishing boats. Since we weren't sure what it was we kept tracking it. There was no radar interference from the target, so it seemed very unlikely that it was a submarine. I could detect the interference on my radar from another American submarine from 50 miles or more away. I had a telegraph key hooked up to my radar transmitter so I could use Morse code via the radar to talk with other US subs. But there was no

radar coming from this, so it probably was Japanese.

Since whatever it was out there didn't have any radar, and thus wouldn't be able to pick us up, we decided to close in until we could see it and be certain of the identity of the target before going into action. Our radio messages from ComSubPac in Pearl Harbor made it clear that there were no other US subs in the area. But we had to find out if it was a submarine and rated a couple torpedoes or was just a spitkit we could tackle with our deck gun. We were ready with a solid hitting solution showing on the torpedo data computer (TDC).

Suddenly I got a strong blast of radar interference. Hold everything, I yelled! I grabbed my hand key and identified us. My knowledge of Morse Code as a ham operator paid off right then. It was the Silversides, and their radar had been broken. By a coincidence, after the war I discovered that the radar technician on the Silversides was a college fraternity brother of mine. He told me about sitting up on top of the periscope shears frantically fixing his damned radar antenna in the middle of the night in a high sea, without being able to use any light to fix it—and not knowing the *Drum* was closing in with torpedoes ready.

Oh, the Silversides was aware of us being there and had their own torpedoes all set to be fired, just as their tech got their radar going again and we made contact. Back at college a couple years later I learned that my fast work with the key had stopped them at the last second from sinking us. If I'd have had to send for a radioman to make the contact we would have been history.

Every now and then something would happen to break the monotony—maybe a Japanese plane would swoop over and try to bomb us before we could submerge. "Hey bridge, I've got a black cat (night radar plane) closing fast at 270 degrees, range 22,000 yards," I'd yell over the intercom to the bridge. Then, "He's now down to 15,000 yards and closing fast." With 2,000 yards to the mile, that was getting close. About then the diving alarm would be sounded (spanooga-spanooga) and there would be the stomping of feet hitting the cigarette deck, then the deck of the conning tower—the hatch would slam shut—"Pressure in the boat"—and down we'd go. We'd be under in less than a minute, coming to periscope depth (47 feet).

On much rarer occasions someone would spot a ship—usually on the radar—and we'd go to "battle stations submerged for night attack on the surface." This meant that we would stay on the surface and track the enemy by radar and via the periscope, keeping our distance so they wouldn't spot us. Submarines have a low profile, so they're difficult to see. The conning tower would fill up during these exercises, with one man on the torpedo data computer (TDC), a large mechanical computer which would aim the torpedoes automatically when the speed and heading of the target ship was entered. Unfortunately we were unable to get direct information on the speed and heading of the other ship, so the TDC operator (usually the executive officer) would put in his best guess at these factors and then see how the answers came out on the computer compared with further observations. If they didn't come out right he'd change the estimated speed on the computer and see how that worked out with the ranges and bearings I'd give him from my radar. Estimating the heading wasn't much of a problem if the captain could see the ship through his periscope and estimate its angle on the bow. Our own course and speed

were automatically fed into the TDC.

The TDC was a marvelous mechanical computer. It was a mass of gears and selsyns (self-synchronizing motors). Before they had the TDCs they used a circular hand calculator called an Is-Was. These looked like big circular slide rules. The TDC had one big advantage...it automatically set the torpedoes to hit the target. All the chief torpedoman had to do was push a switch up over my radar to fire the torpedoes. No last minute setting delays.

When there was more than one ship being tracked a team of two or three men would take over the chart table, just opposite me in the conning tower, and plot the movement of the other ships, estimating their speeds and headings so these factors could be quickly put into the TDC should we decide to shoot torpedoes at them. The conning tower was not large and by the time you had two people plotting, one on the TDC, one on the wheel, me on the radar, one chap on the intercom to the torpedo rooms, and two people on the periscopes, each trying to do his thing, the place was packed almost solid. This wasn't all that bad during surface attacks where we had some air coming down the hatch from the topside and perhaps that little air conditioner up in the corner feebly working, but it got unbelievably hot when we were working submerged and running silent.

The only thing I've ever run into that was close to the conning tower while tracking a ship and running silent was when I was visiting Helsinki and some Finnish ham radio operators convinced me to try a sauna. The temperature would go so high the sweat would run off my nose in a steady stream. The radar equipment would get so hot I couldn't touch it without burning myself. I had to keep some gloves handy for those occasions. I'll bet it got over 180 degrees in the conning tower at these times.

The decks in the control room and after battery would first get slick with sweat, then the sweat would start sloshing around and had to be mopped up. It took enormous will power to even move in this atmosphere, yet we had to do everything by hand power since the hydraulic system motors had to be turned off to maintain silent running. This meant many hard turns of the wheel to pump the hydraulic oil to move the rudder just a little and many turns of the big wheels that controlled the bow and stern planes to move them.

We didn't run silent unless there was a good chance that depth charges were coming. Shit cans, we called 'em. You know, I've never heard depth charges that sounded right in a movie. We sure heard a lot of them during the war. We'd count 'em and often we'd count well over a hundred before things would finally quiet down. In real life they sound for all the world like some giant outside of a big sewer pipe, beating on it with a huge sledge. You are in the pipe. The closer the depth charge is the clearer you can hear that little click before it goes off and a giant bonging sound hits you.

When I was eight years old they were putting in a new sewer pipe not far from my school, so my friends and I would go there on our bicycles and take turns standing inside the six-foot pipe while others would throw big rocks at it. Bonnnng.

I don't recall any pinochle going on during a depth charge—though I do remember Skillet sleeping through one attack. He was a powerful sleeper.

Bravery

I suppose most boys wonder how brave they'll really be when they're suddenly in a dangerous situation. This is something no one can know until it actually happens. How would I react? Would I be afraid? Would I be able to think? Would I panic?

We each had an opportunity to find out about ourselves during depth charge attacks. Some of the crew did fine, others would be close to hysteria. When I wasn't on watch on the underwater sound during an attack I had nothing to do, so I'd sit in the crew's mess and listen to the screws of the ships passing overhead and then the click-bonning of the depth charges. Skinny Ginny would get so upset at these times that I played a game with him to take his mind off what was happening. I'd challenge him to count the number of depth charges that had gone off. Then I'd tell him he was wrong about the number. He'd get so wrapped up in arguing with me about this that he'd forget about the explosions.

When someone would slip on the sweat-covered decks and bang into the garbage locker door next to the sinks in the crew's mess or trip on something, the others were ready to kill. We knew that the ships overhead were listening intently for the slightest noise, so we whispered to each other and kept absolutely quiet.

Other than when we lost the conning tower on the seventh patrol run, we never sustained any serious damage from depth charges.

We lost the conning tower?

This happened just before I came aboard, but I heard plenty about it from the people who were there.

It all started with a fairly routine tracking of a single ship with an escort. It was daytime and the water was as smooth as glass. The captain got lined up just right and sank the ship. As soon as the captain saw the torpedoes hit through the periscope he took the boat down to 300 feet to get away from the escort, which by now was going this way and that, looking for us.

After about a half hour, with no further screw noises on our sonar, the captain called for the boat to be brought up to periscope depth. Everyone around him was saying no, no, let's not do that! But he wanted to look and see if the escort was still in the area.

The officer of the dive got the boat up to periscope depth, but didn't have tight control, so it went a few feet higher. The captain raised his periscope and started looking from aft on around, walking around the periscope well. Nothing there. When he got to the bow he whooped to take the boat down. The escort was right there a couple hundred yards away and was steaming straight for us.

Some of the crew were a little critical of the captain for being so impatient. They were further critical for his raising about six feet of periscope out of a flat ocean.

The boat was just barely under when the escort went overhead, almost hitting

the periscope shears. It dropped six depth charges, which went off all around the conning tower. This ruptured the hatch in the after end of the conning tower, letting a spray of salt water pour in.

There was a scramble as everyone climbed down to the control room as fast as they could. That meant jumping down the hatch and grabbing the ladder's hand rails to cushion the landing. By the time the last two men were out of the conning tower the water was pouring down the hatch into the control room in a flood. This had washed the rubber mat from under the hatch going to the bridge into the control room hatch, making it do they couldn't get the hatch closed. It took six men climbing the ladder and pushing the hatch up before they could pull the mat down and finally close the hatch.

With the conning tower rapidly filling with water they had to blow the water out of the emergency tank to keep the boat neutrally buoyant, so it wouldn't go down out of control. They headed down to 300 feet again, hiding under a temperature inversion so the escort couldn't echo locate it. They did not come back up until after nightfall, and then they headed back to Pearl Harbor to get the conning tower fixed and all the equipment replaced.

When I came aboard they'd decided it wasn't possible to fix the cracked door, so they'd taken off the after end of the conning tower and welded a new end on it. Then we went out and made some test dives to see how it would hold. The tests were not satisfactory, so they had to send the boat back to Mare Island in California to have a whole new conning tower installed.

That was great for me because I got two weeks leave in the states out of it, plus several weeks more taking it easy around Vallejo while they were finishing up.

The Japanese apparently weren't aware that our submarines could go down to 300 feet, so they had been setting their depth charges for around 250 feet. We heard that someone got up in Congress and bragged about this. This news quickly got back to Japan and they then corrected this little error, and started sinking more American subs. I've often wondered who the Congressman was.

Submarine design

Everyone on a submarine has to become a qualified submariner. This means learning everything on the boat, from stem to stern. It means understanding how every system works, and the use of every valve or control—and a submarine is packed solid with valves and controls. There's the 3000-pound high pressure air system, the low pressure air, the low pressure blowers, the fuel oil tanks, pipes and valves, the main and auxiliary ballast tanks and their control system, the emergency ballast tanks, the trim tanks, the sumps, the hydraulic system, the sanitary tanks, the fresh water system, the 120-volt electrical system, and the 250-volt main electrical system. There were enormous batteries up under the officer's and chief's quarters, and another set under the crew's quarters (where I slept).

We had to learn how all these systems worked, how to fire torpedoes, how to hydraulically or manually rig in and out the bow and stern planes. A submarine is

a very complicated vessel, so it often took newcomers a couple patrol runs before they were "qualified." One of the questions they often asked when we were being examined was how can you put fuel oil out of the whistle? You had to know your systems and the operating manifolds to pull that one off.

Outside of the 3/16th inch hull of the submarine are the fuel and ballast tanks. We had enough fuel along to cruise around 10,000 miles. Tons. We'd keep the drain valves on the bottom of the fuel and ballast tanks open to the sea when we were on patrol. As we'd use the fuel from the top of the tanks, they would gradually fill up with sea water. Oil floats.

To submerge, we'd open the vents on top of the ballast tanks, allowing the sea water to come in through the drains on the bottom and down we'd go. The trick was to obtain neutral buoyancy, so when we were cruising submerged we didn't have to use the bow planes to keep us from going up or down. Some officers had a terrible time doing this, much to the amusement of the crew—and the captain.

To make it more complicated, when we wanted to move to a lower depth we had to lighten the ballast by bleeding some air into the tanks. Lighten to go down? Yep! You see, as we went down the pressure of the water compressed the boat, making it heavier for its volume, so if we didn't lighten the ballast we'd have to use ever more upward angle of the bow and stern planes to maintain our depth.

There's more. A submarine has to be very delicately balanced so it'll cruise with both the bow and stern planes in neutral. If the boat is too heavy fore or aft, it'll tend to go up or down. This balance is maintained by moving a few pounds of water from the forward to the after trim tanks, or vice versa. This is such a delicate balance that if a man walks from the forward torpedo room to the after room, the auxiliaryman has to pump a hundred pounds or so of water to bring the boat back into balance.

When it's time to go back to the surface the 3000-pound air banks are used to blow the water out of the main ballast tanks. With the top vents closed, the air pushes the water out of the drains and brings the boat up. Since it takes a long time to jam air into the high pressure system bottles it's important not to use any more than is absolutely necessary. Thus, once the high pressure air has been used to blow most of the water out of the main ballast tanks, it's shut off and the low pressure blowers take over, blowing the rest of the water out. These blowers are in the pump room, right under the control room, and they make one hell of a racket. They can't be started until their input vents are above the water.

Then the main engine intake valve is opened and the main induction valve, allowing the diesel engines to be started and outside air to flow into the boat's air distribution system. On a few occasions when we had to clear out fouled air in the boat in a hurry we'd leave the main induction closed and let the main engines take a suction through the boat. When we did this we had to be extremely careful that all compartment doors were firmly latched open, otherwise the engines would have sucked the air out of the boat and we'd have been asphyxiated.

It's believed that the reason the Squalus sunk was that they dove with the main induction valve open. That flooded the boat in a matter of seconds beyond their ability to counter it by blowing the emergency ballast tank. When we lost use

of our conning tower due to depth charges and it filled with water, we were able to maintain our buoyancy by blowing the emergency tank, which could compensate for the loss of one compartment.

Compartments? The fleet type submarines of WWII had nine water-tight compartments, each with heavy doors between them. It didn't take newcomers long to learn how to move quickly through the boat, ducking and hurdling these compartment doorways, as they ran. Starting from the bow was the forward torpedo room, then the forward battery, the control room, with the conning tower over it, then the after battery, the forward and after engine rooms, the maneuvering room, and the after torpedo room.

The forward torpedo room had six tubes and the after had four. Ten tubes and 26 torpedoes. The officers and chiefs lived above the forward battery, complete with their galley and mess. The forward part of the after battery compartment had the galley, mess hall, and refrigerators underneath. The crew's bunks were above the battery. All this in a boat about the length of a football field and the width of two mobile homes. There were three heads—one each in the forward and after torpedo rooms, and one (a two-seater) in the after battery. There were two showers here too, right across from the head in the after part of the compartment, but they were filled with cans of condensed milk for the first few weeks of a patrol run. Once we'd eaten enough food to empty the showers we could start using the them. Sparingly.

Operating a head while submerged calls for some special skills—and since the head is below sea level even when the submarine is on the surface, you have to learn these skills fast when you first come aboard or else you're in a heap of trouble.

There's a valve between the toilet and a "sanitary tank" below it. The tank isn't very sanitary, as one discovers if one makes a mistake. Then there are two valves between the sanitary tank and the sea. There are always two valves on any connection between the inside of a submarine and the ocean, just in case one valve gets carried away (breaks) during a depth charge attack.

But since the contents of the tank are well below sea level, you have to put some air pressure into the tank to blow the stuff out. This is where things can go wrong. memorably wrong. If you use the toilet, then open the flapper valve to empty the contents into the sanitary tank, close the flapper, open the valve to the sea, put air pressure into the tank until it's empty, and turn off the air, you end up with pressure in the tank. This is not the best time to open that flapper valve again, because the sanitary tank is never completely empty. This can get you a face full of memorable spray. You have to remember to vent the tank after blowing it out. When you're on the surface you open the outboard vent valve. When submerged you open the inboard vent valve, releasing a terrible stink into the compartment. Thus we almost always waited until we were on the surface before emptying the sanitary tanks. Of course, if we were being held down by the enemy and the tanks were full, we'd just have to put up with the stink, which is quickly circulated throughout the boat. Peee-you!

If someone using the head didn't check first to make sure the tank had been vented by the previous occupant, when he pulled the flapper to empty the toilet

contents into the tank, he'd get it in the face. This didn't happen often—usually when someone would come back to the boat from liberty drunk and forget. I don't think anyone ever forgot twice, no matter how drunk they were..

It is intimidating when one first has to use these heads, but eventually necessity overcomes fear. But it was something we always had to be wary using.

Balls of fire

There may be some controversy among scientists about ball lightning, but ask any submarine motor-machinist mate about plasmas, and you'll find they're not uncommon on a submarine.

Our four Fairbanks Morse diesel engines each drove electric generators. Monster switches in the maneuvering room controlled where the current from each of the generators went. The electricians could switch the power to either main motor, to either the forward or after battery, or any combination. The switching system was all housed in a huge cage that took up most of the maneuvering room compartment. When a high current line was switched, every now and then a ball of electricity would be formed by the arc, sneak out of the cage, and bounce through the door into the after engine room, where it would bounce around some more, and then explode. The motormen never quite got used to dodging these pyrotechnics.

I experienced ball lightning once up at the family "farm" in Bethlehem (NH), where I spent most of my summers while growing up. My grandmother and I were there alone, eating some peach shortcake for lunch, when a small rainstorm blew up. We quickly closed the windows to keep the rain from coming in, and as we were about to step through the door into the kitchen, there was an explosion about two feet away from us, six inches off the floor. I happened to be looking right at the spot where it happened. It looked, sounded, and even smelled exactly like a cherry bomb exploding—only there was no one around to play pranks.

Then we heard several more explosions around the house. One was out on the front porch, another in the kitchen, and one outside in the telephone box. The one in the kitchen exploded next to the pump by the sink, blowing a jar of soap powder all over the cabinet under the sink. The one outside the house blew the lid off the telephone box, knocking it a good 50 feet. Odd how ball lightning works.

The pump? Our water came from a spring up the hill and ran into a 20-gallon jar in the cellar. From there we pumped it up to the sink. You're probably used to faucets, electricity, and all those modern conveniences. My morning shave was with water heated by the wood stove, and my shower from a five-gallon sprinkling can hoisted by a pulley. And yes, we had a backhouse, out behind the barn.

Submarines Are Not Bottom Fish

In most of the submarine movies we see the submarine settling down on the bottom to wait out a depth charge attack. Submariners get a big laugh out of this, with *Drum* crew members laughing the hardest.

Here's what happened: We were coming out of Pearl Harbor on our eleventh

war patrol, as I recall, and somehow we got a little out of the channel and ever so gently went over a small sand bar. If it had been a foot higher we would have had to turn around and go back for another week or two of repairs, a change of navigators, and endless ribbing.

I don't think any of us realized at the time the problems that even a slight brush with the bottom could generate. The fact is that we never should have continued on patrol, for serious damage had been done by that gentle touch with the sand. We didn't recognize the scope of the difficulty until a couple weeks later when, after an attack, we found ourselves faced with trying to dodge depth charges while running silent.

After touching the sand bar we immediately checked to make sure our drain valves were still working, since they're along the bottom of the boat and thus might have gotten clogged with sand. Most of them don't have to be closed very often, so if we had to lose the use of any valves, those were the most expendable. We didn't seem to have any problem with the drain valves, but there was no question that one propeller shaft had been slightly bent by the contact. This was what haunted us later. It meant that when we wanted to run silent we had to run on just one motor, which complicated the steering and wasn't nearly as quiet as two slower turning propellers.

Perhaps I was over sensitive to the situation since I spent a good deal of our silent running time on one of the underwater sound units and thus could hear the queep-queep-queep sounds when the bum drive was being used. It's bad enough under the best of conditions, moving along at a walking pace of two or three knots, hoping to find a thermal gradient which will hide us from the enemy echo ranging. Submarine life does have its tense moments.

The idea of running silent is to make as little noise as possible. Every electrical motor is turned off, including the air conditioning. So the last thing we needed was one propeller shaft queeping to the enemy above, pin pointing our position for them.

The shaft was pulled and straightened during our next refit.

Setting a submarine down to rest on the bottom à la the movies isn't practical in very many spots. We used to joke that we were seldom more than a mile from land—straight down. It wasn't much under that either. Since my battle station was in the conning tower I had the comfort of knowing that my compartment should be able to outlast the rest of the boat. When the after end of the conning tower was cracked during the 7th patrol run the repair crew at Pearl first tried to fix it with a new back bulkhead, when this didn't make it through the test drives we had to sail all the way back to Mare Island, California and have a new conning tower installed. This was one built for a boat designed to be safe down to 600 feet. This meant that the 300 foot depth *Drum* had a conning tower built to withstand twice the boat's depth. This was a very slight comfort.

Sometime after the war the Navy went to a lot of expense to change the conning tower again. I next saw the boat when it was tied up at the Washington DC Navy Yard as a school boat. There was a ham convention in Washington and one of the attractions was a visit to the *Drum*. I spent most of a day there telling the

visiting hams about the boat and showing them where everything was. I was disappointed to find that another conning tower had replaced the one we used for the last five war patrols.

You can see the *Drum* today if you ever get to Mobile. It's tied up right in front of the battleship *Alabama*. We have our yearly crew reunions there.

One more aspect of sitting on or even touching the bottom, the two sonar heads hang out of the bottom of the boat when they are being used, so even a light touch would wipe them out. You can't sit on the bottom and listen with the regular sonar equipment. We did have a microphone topside for listening, but it wasn't nearly as sensitive as the sonar units.

Submariners On Leave

When we got back to the States to get the new conning tower several of the crew were ready. I doubt that the *Drum* would have sunk if bombed on its way from Pearl to San Francisco. It was packed in every available spot with cartons of cigarettes. I mean packed. Hundreds of cartons. You see, cigarettes were rationed in those days and they only cost 50 cents a carton from ship's service. Some submarine skippers were difficult about their crew bringing back cigarettes—ours wasn't. Not being a smoker, I didn't bother to bring back any myself.

When we reached Vallejo, just north of San Francisco, I headed for home by plane. This was quite an experience back in 1944, with the unpressurized plane stopping every few hundred miles for gas. The first stop was Elko, Nevada as we hopped across the country. Though it took the best part of a day it was still a lot better than the five day train ride it took for me to get out there.

Elkins managed to have a far more eventful leave. He bought an old Rolls Royce, which no one wanted because it used so much gas, which was strictly rationed. He loaded up the back seat and trunk with cartons of cigarettes to trade for gas, and drove clear across the country and back. Just before we left to go back on war patrol he took a bunch of the crew with him and drove across the Golden Gate Bridge. When he got to the toll booth the fellow leaned out and said, "Fifty cents." Elkins looked at him, thought for a minute, said, "Sold," and they all piled out and ran off, leaving the old Rolls at the booth.

My mother and father celebrated my leave with a train trip to New Hampshire to visit my grandfather in Littleton — and to get in some fishing through the ice. My father loved fishing so I didn't. I was so angry with him for being a lousy father that I went out of my way not to enjoy anything he particularly liked to do. But it was a lot of fun ice skating for miles up and down the Connecticut river. I've never seen the river frozen over with no snow like that again. Yes, I found some thin ice and fell in, but I got out by myself.

That \$10,000 insurance policy

Since radio school duty seemed pretty safe, I put off applying for the regular military insurance package. Why waste money on premiums when it was unlikely

that I'd get killed? Nobody seemed to be dying at school.

After my first war patrol on the *Drum* I reported to the dispensary on our sub tender, the Sperry, for the medical exam so I could get the insurance policy. By this time there was no question in my mind that a person could get killed doing this submarine stuff. Not only were there several thousand Japs out there dedicated to limiting my days, but as the holder of secret knowledge of our radar, I knew that the captain had orders to shoot me in case a potential capture situation ever arose. Heck, I couldn't even look forward to dying in a miserable Japanese prison camp.

Having applied for the insurance I felt a lot better—my folks would at least benefit a bit from the deal. And \$10,000 then was worth a lot more than it is these days—probably worth about \$250,000 in today's Monopoly dollarettes.

Three war patrols later I got a letter from the Navy saying that the Sperry doctor had left one of the boxes on the application unchecked and thus I still had no insurance coverage. I got mad. We had more than one close call during those three runs—heck, once we'd been reported sunk and we surprised everyone by showing up one day at Guam. They were so convinced we'd been sunk they didn't even have our mail there for us. Or our pay. Or the usual big containers of ice cream. We discovered later that we'd been unknowingly running full blast through mine fields just off Okinawa, so it was no wonder they didn't expect us to show up. And this was obviously under orders from ComSubPac.

I was so damned mad at them for screwing up my insurance I refused to buy it at all—until the day of my discharge back into civilian life. The insurance was so inexpensive that I finally signed up then.

Boxed in

One of the more nervous times I had on the *Drum* was off the coast of Palau. We had been running submerged during the days, looking for ships sneaking close to the coast. We were headed south along the coast when I picked up echo ranging ahead of us. I immediately reported this to captain Rindskopf and he turned us 90 degrees, heading out to sea to get out of the way. LaBoef, my assistant technician, was on the other underwater sound system and a couple minutes later he picked up weak echo ranging dead ahead of us—a second ship searching for submarines!

We only had one way left we could go—north. We quickly turned north and hoped we could keep ahead of the searchers. We were going as fast as we could comfortably while submerged, which isn't very fast compared to a surface vessel, even one that's taking it easy so they could echo-range.

Both the first and second echo-ranging got closer and closer—then I picked up something that I didn't want to tell the captain about—echo ranging from the north! Three search ships were all headed right toward us and there we were, not far from the shore and in shallow water. We turned again, heading for the coast of Palau, hoping that none of the three would pick us up. If they did we'd be sitting ducks. A submarine is no match for anything with a gun on the surface. All we had was a 3/16" skin, and just about any size shell would zip right through that and we'd be through. Our hull wasn't armored, it was just made strong enough to keep

from collapsing when we went down 300 feet.

LaBoef and I looked at each other, both thinking the same lousy thought. As the electronic technicians, and trained in servicing the latest in radar, the captain was under orders not to allow either of us to be taken prisoner—so we didn't even have the possibility of being prisoners of war.

With sinking feelings LaBoef and I listened while the pinging got closer and closer—surely the ships would be picking us up at any moment. How could they possibly miss us? Somehow they must have known about where we were and were busy hunting us down. Maybe they'd had hydrophones out there which had picked us up and alerted them. We cut back our speed to be as quiet as possible and headed toward the weakest ranging signal of the three ships, hoping to put off detection as long as possible. Just when all three seemed almost on top of us and we could hear their screws clearly—they all sounded like light destroyers—all three of them turned around and headed back the way they'd come, pinging away. The three had been on routine anti-submarine patrol, following a grid pattern, and we'd managed to stay just barely out of range of all three!

Could the *Drum* have lasted through an attack in that shallow water? No way!

Later the captain wanted to confirm the depth of the water and he asked me to take one single ping with the depth sounder. I was more than a little nervous since I'd only used the confounded thing once before and this was no time to make any mistakes. More than one ping would alert the Japs of our presence. I made it—one ping. We were in only a little over 100 feet of water. Sitting ducks, just as we'd figured.

The great Ginny bread peril!

After we got fed up with Skinny Ginny's lack of cooking skills he was put on the midnight bread baking detail. Now he was our baker. I think this change came soon after he was discovered scooping the stew back into the pot from the galley deck, where a larger than usual wave had dumped it off the stove.

Skinny had trouble now and then getting his bread to rise. I remember one night a group of us were pinochling it way into the morning hours as Skinny mixed his usual batch of bread in a big pan. He set it aside to rise, but it just lay there—dead. Skinny gave it another half hour and then gave up on it, dumping the dough into the waste can in the garbage locker next to the sink.

He had a second batch mixed and rising according to the rules of baking when suddenly we were all astounded to see the garbage locker doors burst open and bread dough come pouring out of it into the passage. Skinny instantly knew what happened—the garbage locker was warm and that got the bread dough started. He went over and beat the dough back down, gradually wrestling it back into the waste can.

Whoomp! A few minutes later the locker broke open again and bread began to advance menacingly across the compartment toward our pinochle table in the corner. Skinny let out a whoop and started punching it like a featherweight contender, gradually gaining on it and eventually getting it back into its can, cowering at the

flailing fists.

We were at peace for no more than five minutes when the locker sprung open again and it was breadsville. Skinny gave up and requested permission to throw the the damned stuff over the side. Somehow Skinny managed to wrestle the dough into a gunny sack, add enough weight so it would sink and not give our position away to the Japanese, get it through the control room, up into the conning tower, up to the bridge, and over the side before it could break loose again.

From that night on, when dough wouldn't rise right away, Skinny always outwaited it.

Casino Majuro

Down through the years I've visited many gambling casinos around the world—in Las Vegas and Reno, Weisbaden, Monaco, Macau—but never have I seen gambling such as I witnessed on Majuro after our ninth patrol run.

The heavy stuff got going the afternoon after we arrived—right after payday. We'd gotten our pay for a two month period and there was almost nothing to spend money on here. Ice cream (called gedunks) after the movie were only 10 cents, so money was of little use other than for gambling or sending home. I don't know how much everyone else drew in pay, but as I recall I got about \$410, which was probably about average.

When we went ashore at Majuro for our two weeks of rest and recuperation, we brought along our coffee maker and a few gallons of torpedo alcohol—called gilly. The coffee maker had been converted into a small still by the machinists, so they soon had plenty of pure drinking alcohol to add to the cans of grapefruit juice they'd providently brought along. Rugged stuff.

The poker game started off innocently, with no big stakes. The bets were running around a dollar. But, as time and the gilly loosened things up, the pots got bigger and bigger. And, like making progress with a woman, there was no going back, so as pots got bigger they could do nothing but get even bigger. Hands were opened for \$5 and raises were usually \$50 or more. Most of the money eventually ended up with one chap who wired several thousand dollars home. Was it Elkins? I've forgotten for sure by now.

All that gambling got to me. I wasn't courageous (or foolhardy) enough to get in the poker game, but I did get into a couple modest crap games and came out a couple hundred ahead.

On our second visit to Majuro the gambling got started on the boat the night before we moved ashore into the rest camp. The big deal was a 25 cent limit poker game. Heck, you can't really lose with something like that—right? I sat in on it for about four hours and lost over \$300, a quarter at a time. Never once did I win a hand. I did manage to win a few side bets that I would have the worst hand, but that's all. With six weeks of pay shot I was discouraged so I quit the damned two-bit poker game and joined the crap game at the other mess table—and won back my \$300 within ten minutes, plus some to spare. Whew!

Where's Amelia?

Several years ago a book came out on the *Search For Amelia Earhart*, by Fred Goerner, Dell Publishing 1966. Those shipmates who rested and recuperated with me on Majuro after the ninth patrol run may remember the story we heard from the natives, and was confirmed in the book—that Amelia Earhart and Fred Noonan had crash-landed at Majuro and stayed there for several weeks before being picked up by the Japanese and taken to Saipan.

The author of the book found himself fighting the government at every turn. They tried to keep him from getting to Majuro to talk with the natives. They tried to keep him from going to Saipan to talk with people there. They tried to prevent ex-Navy personnel from talking with him. One retired Admiral, who'd promised to tell the whole story, later refused to discuss it.

Why all the secrecy? It had to do with the whole purpose of Amelia's flight around the world—and oddly enough by a fantastic coincidence, I am one of the few people left who knew something about this.

At Majuro I remember talking with a couple of our crew who had been to another part of the atoll island chain and talked with the natives. They brought back the story of Amelia's plane landing in the lagoon and Fred Noonan being injured in the landing. I told them at the time of my "inside" information on the flight and its true purpose of spying on the Japanese fortress at Truk.

At the time of Amelia's flight a good friend of my father, Bob Wemple, stopped by for dinner at our house in Brooklyn, and mentioned that he had been hard at work with a small crew installing some high powered engines on Amelia's plane and adding extra wing tanks so it would be able to cover a far greater range than was commonly known. He explained that this was so she could fly from New Guinea to Howland Island by way of Truk, giving her a chance to take pictures with special cameras he'd installed of the Japanese installations for the benefit of the Navy, which had had no success in finding out about them any other way. The more powerful engines would let her keep her normal flying schedule to Howland, and the extra tanks of gas would let her cover the additional mileage.

The plan went awry when Amelia and Fred missed Howland and were last heard from heading toward the Marshall Islands. Radio equipment was not very dependable in the '30s, and Howland was a very small and flat island—quite easy to miss.

You have to read the book to believe how much trouble the author had in finding out the few facts I had accidentally learned. Both our government and the Japanese did everything they could to discourage him. The Japanese were probably trying to protect themselves because Fred Noonan died on Saipan and Amelia apparently was killed there later on—and buried. The author also found strong evidence that American intelligence agents destroyed the wrecked Earhart plane and its cameras, which was still stored on Saipan when we captured the island. This was just a few weeks before the *Drum* stopped there overnight to refuel, where we heard a similar story from the natives.

I should think that something sixty years old would be publishable by now. How long do they want to keep secrets anyway? Okay, so America spied on Japan sixty years ago, and Japan killed our spy. It isn't exactly shocking or embarrassing at this late date.

Bob Wemple was a good friend of my father's from when we lived in Pennsauken, New Jersey, near Philadelphia. My dad designed and built Central Airport, in Camden, as the main airport for the Philadelphia area, so we had well-known aviators frequently coming to dinner—people like Frank Hawks and Amelia Earhart. I've got a picture of my father with Amelia, and I used to admire her Lockheed Orion, which she kept at Dad's airport. It was a beaut.

Amelia was a part owner of Luddington Airlines, which ran flights in the 1930s "every hour, on the hour" from New York to Philadelphia to Washington. When the airline needed an extra plane they would occasionally borrow Amelia's Lockheed and use it for passenger service. Normally they used Stinsons.

Bob Wemple often had dinner with us when we were living in New Jersey, so I knew him well. He was a short, thin chap with sandy hair, a pointy waxed mustache, a limp, and a great sense of humor. He used a cane. He married Miss Philadelphia in a plane while flying over the city.

We moved from New Jersey to Washington when my dad went with Luddington Airlines as its passenger manager. Then, a couple years later, when Tommy Luddington sold the airline to Eastern, we moved to Brooklyn, where dad got busy starting Marine Airlines, an airline using flying boats to run between Boston and downtown New York. But that's another story of intrigue and dirty politics, and an interesting one.

Bob explained that the whole reason for Amelia's around-the-world flight was as a cover for the spy mission to take photos of Truk for the Navy. President Roosevelt, who had once been the Secretary of the Navy, had organized the mission. Japan is obviously embarrassed over having killed one of our most famous heroes, so they were busy covering up the mess from their end. And the Navy, even at this late date, is embarrassed over the whole thing, so they're still doing all they can to cover up what really happened. It would have been far better if Roosevelt had owned up to the whole thing at the time.

Now, whether Amelia and Fred landed at Majuro, or another of the Marshall Islands, I don't know for sure, but if you look at a map of the Pacific and see where Howland Island, their target, is located, you'll see the same thing I do. Having flown over the Pacific in relatively small planes, going from island to island, I understand how difficult these small islands and atolls are to see. Until you see it yourself, it's difficult to comprehend how enormous this ocean is, and how small these tiny dots of land are. And many of them, like Howland, are low, just barely above the water's surface.

When Amelia and Fred were trying to locate Howland Island there were clouds, and their radio equipment wasn't working right. If I'd been them and realized that finding Howland was going to be almost impossible, I'd have headed for the nearest bunch of islands, either the Gilberts, to the west, or the Marshall Islands, less than a thousand miles to the northwest. With their secret extra wing tanks of gas,

they could have made the Marshalls easily, and there are so many islands in the group that finding them would be easy compared to the Gilberts. And then there's Majuro, one of the first of the Marshalls they would spot when coming from that direction—Majuro with its beaches around the central lagoon.

The natives said that a couple weeks after the accident a Japanese ship arrived and took Fred, Amelia, and the plane away—to Saipan. Both the book and interviews I've seen on TV since then with Saipan natives, confirm that Fred died there in prison, and that Amelia was executed just before the Americans captured the island. Natives have pointed to the place where they saw her executed and buried. And there's testimony from both natives and American soldiers that their plane was burned by an American military intelligence officer.

Well, no matter where they landed, or whether they were on Saipan or not, there was no reason for Bob Wemple to concoct the story of Amelia's spy mission, and that's still being covered up.

No Spam in 50 years!

It is unlikely that any of the *Drum* crew who survived the war have been able to even look at a can of Spam without gagging. I'll explain.

It was along about halfway through a patrol run and things were getting a little raunchy in the freezer—even raunchier than usual. As a matter of fact it got so bad that Skillet, who slept just downwind of the hatch with the freezer under it, started losing sleep. As his sack time cut down from 20 hours a day to 16, Skillet began to get uncomfortable. He was still able to sleep through depth charge attacks and keep right on snoring through the sauna-like silent running.

But when his sleep got down to 14 hours he gradually galvanized himself into action. Something just had to be done. He finally got up, introduced himself to those of the crew who had never seen him awake before, and yawned his way down into the food locker to clean the freezer. The effort was too much and a short while later we noticed Skillet back in his usual position. The freezer had been cleaned.

We didn't realize the extent of the disaster which this cleaning episode brought down on us—not for a couple of days. Skillet realized he had goofed when he woke up a day after cleaning the freezer. It all began with pork chops for dinner the next night. We wondered about this because the official Navy menu called for beef for that day and the galley slaves were not known for excursions from the regulation cookbook.

Pork chops again the next night for dinner, cooked according to only recipe in the Navy cookbook (as usual) flagged all of us that something was amiss. Skillet stonewalled the situation, refusing to be awakened for comment. Fry said he was only working under menu orders from higher up (Skillet had a top bunk). Yes, the cook's name was Fry. Claude C. Fry. He had a twin brother Clyde C. Fry, but that's another story. That's another great story!

The third day of pork chops was special—we had them for both lunch and dinner. The more volatile crew members refused to accept hibernation as any ex-

cuse for not getting to the root of this situation. They shook Skillet awake to get some answers out of him. The Captain had noticed the sudden menu bias, though he was more protected from it by George Lytell, who used a lot more imagination and resourcefulness in his cooking for the officers than Fry did for us peons.

It seems that Skillet had taken the meat out of the freezer so he could clean the freezer. Okay so far. He had cleaned the freezer—tiring himself unduly. Even the cold of the freezer couldn't keep him awake more than four hours, so he quickly threw the pork back into the freezer, knowing that it would be sure to spoil quickly if he didn't. The other meat would just have to wait for him to get a little nap—then return it. Unfortunately it didn't wait and he had to sneak it all over the side with the garbage. This left us with pork—period.

The pork chops ran out in about a week, but not before the crew was again ready to give a midnight party topside for Skillet. Was it Johnson who took a look at the plate of pork chops on the sixth day and hung one, dripping grease, as usual, in the middle of the crews' mess? Some had long since gone off pork for life and switched to sardines or peanut butter. Or both.

Cheers went up when we finally ran out of pork chops. We were a little hasty in our celebrating. The pork was replaced with Spam. From then on we had Spam three meals a day, plus the midnight snack. We had fried Spam, broiled Spam, Spam salad, Spam hash, Spam omelet, stewed Spam, baked Spam, Spam sandwiches. We even had stuffed Spam (stuffed with Spam). This went on for another ten days—we sure had an awful lot of Spam with us. I doubt if anyone who went through that experience has ever eaten another bite of Spam—not in 50 years. I know I haven't.

Safety lane

In order to permit our subs to travel to and from their patrol areas without having to worry about getting sunk by our own planes the Navy established a safety lane across the northern Pacific. Air crews had strict instructions not to bother any subs in the lane.

So there we were, running along in the middle of the lane one day on our way back to Majuro after a very successful patrol run. We'd had a great run and were going back for a refit and supplies, plus a couple of weeks rest camp. Our pinochle games had turned from friendly to 10 cents a point since we'd be seeing payday in a few days. The heavy winners in these games would stand at the payday line exit and collect their winnings immediately as the losers emerged, pay in hand.

I was, as usual, sacked out, resting up for another heavy bout of pinochle, when the main engines suddenly stopped. This was most unusual. We'd been running hard for several days on the way back and I knew that every possible ballast tank had been blown dry to lift us as high out of the water as possible so we could make good time on the surface. The diving alarm spanoogahed and we started down—followed almost immediately by an explosion just behind the boat. I could tell it hadn't hit, but it sure was close.

Having nothing else to do, and with my interest aroused, I got up to see what

was going on. It seems that we'd been chugging along peacefully, in the middle of the safety lane, when an American patrol plane had come into sight. We looked up the recognition signals for the day and blinked them with our light. The plane responded with the correct answer, and we reconfirmed it. Then, as the plane kept coming our way, we grew concerned and sent up a recognition flare. They continued to come toward us, causing mounting concern on the bridge. Maybe they were going to just pass low over us and wave? No, they passed low over us and dropped a bomb. It missed, but just barely. We dove.

There was a good deal of running around and flurry trying to get the damned boat to stay down—trying to get the ballast tanks set up so we could stay at the depth we wanted without porpoising up and down. With most of our ballast tanks dry, we had to flood just about everything to get under. Luckily it was a slow plane and we managed to disappear before they could come in for a second bombing run.

Some safety lane.

Navy language, which is quite different from most civilian language, is particularly well adapted for commenting on events like this.

Gilly

At sea, other than an occasional drink for morale purposes after a particularly severe depth charge attack, we were a very pure bunch—no drinking—no gambling. The boozers would get around to the non-drinkers when medicinal supplies were in the offing, showing great displays of friendship. My normal range of friendship included pinochle buddies and my fellow watchstanders, but when booze was about to be doled out I was amazed at how many friends I actually had.

Once ashore all the rules were off. I found out all about that the first time we hit Majuro for our two weeks of rest and recuperation. The coffee urn, as I explained earlier, was quickly spirited ashore and set up with non-coffee innards. A twenty gallon can of torpedo alcohol made it ashore the same night and it wasn't long before the coffee urn was a working still. I'd wondered about the dozen or so cases of grapefruit juice which had come ashore with us. That was for mixing with the distilled alcohol (called *gilly*).

It wasn't long before there were a couple dozen very drunk *Drum* sailors wandering around Majuro Island in the middle of the night heaving huge chunks of the light weight coral onto the corrugated metal roofs of the Quonset huts, shouting "depth charge."

After each run, as we headed for rest and recuperation, the coffee urn, special innards and can of torpedo alcohol went with the crew—to Camp Dealey on Guam—even to the Royal Hawaiian Hotel. This seems to have been a special *Drum* ritual for I noticed that other sub crews on Majuro were coming around with cups to borrow *gilly* from our urn, or urinal, as we called it.

I tried a taste of the *gilly* mixed with grapefruit juice—ugh! No, I'm a gedunk sailor.

Who's chasing whom?

One day, in July 1944, we were cruising off the island of Yap. Our purpose was to be there to pick up any pilots who might get dunked while involved with an air attack on the island. Lifeguard duty.

Everything went fairly well. We were a few miles off the island when our planes came in on schedule for the attack. We saw a couple Jap planes take off, but they avoided tangling with the attacking force. One of them, having nothing better to do, spotted us standing by and swooped down for a strafing run. We ducked, but not before I could hear the shells hitting the boat. I was in the crew's mess at the time and I could hear the shells popping right outside the hull, near my head. They were too small a calibre to pierce the hull, but they did chop holes in the wooden decking.

We stayed down for a little while and then came up to periscope depth to have a look. It was getting toward late afternoon, and as we looked around we spotted a small ship nearby. It was too small for us to torpedo, but it might be worthwhile sinking with the deck gun. We were a bit too close to it to take any chances, so we turned away from it and snuck off for a few minutes, wanting to be well clear of the "spitkit" before surfacing so we'd have a good chance to get the deck gun set up and working before attacking it..

After a half hour run at around four knots we poked the periscope up to see how things looked. Hmmm. The spitkit was right there close by; somehow it had been able to follow us! We'd been running pretty quietly, so how could they possibly been able to follow us? It didn't make any sense. And why were they following us? Did they have some surprise which we couldn't see through our periscope?

We turned again and headed away, running completely silent. After another half hour we came up for a peek. Good grief, it's still there! The captain cursed them out, wanting to sink the bastards, but frustrated by and wary of the unknown. We discreetly went down again, going much deeper and we zig-zagged away for over an hour before peeking again. This time the coast was clear and we breathed a sigh of relief.

We never did find out what the mysterious spitkit was, or how it was able to follow us around like that, or what surprise they might have had in store for us.

When the onions hit the fan

Those of us on the eleventh war patrol will never forget it. It was the one where we sank a whole bunch of ships—and had the damndest time with Skinny Ginny.

It started out peacefully enough. ComSubPac had sent us to keep a watch over the Surigao Strait. We chugged back and forth across the entrance to the Strait for about two weeks. I was busy getting the frequencies of their radar and estimating the coverage they were getting with it, and when it was being used. This information was radioed back to Pearl to help our invasion fleet get as close to Leyte as

possible undetected. The Navy had installed a special VHF-UHF radio for these countermeasures.

Suddenly we got a radio message from Pearl to get the hell out of there. We found out later that our fleet had come in as we left, leading the way for McArthur and an invasion force to hit Leyte. We sailed full speed north, going up around Luzon and into the Balintang Strait, where we were set up in a big grid with several other subs waiting for the Japanese to send reinforcements down to Luzon. The Japs must have known the subs were there because they were sending patrol planes over every few minutes to make sure we stayed down.

I remember one peaceful noontime—we had been running at periscope depth and waiting for something to happen. Suddenly it did. All 82 of us began to choke and cry. Our eyes filled with tears and we couldn't see to keep our depth or to steer the boat. What the hell happened? It turned out that Skinny Ginny had been making some hash and put a bunch of onions into the grinder—which was right under the galley air intake. The onion juice then was instantly swept into every compartment and all eyes and noses were hit. We really had no choice but to surface for some fresh air and hope for the best as far as the planes were concerned.

We surfaced, took a suction through the boat with the main engines to clear the air, took a quick sun sight as an official excuse for the surfacing, and went back down before any planes closed in on us. We made it, but it was a dangerous thing to do.

A few days later the galley slaves hit us again. This time it was Skillet. We were having steak for dinner that night and Skillet had asked some of the crew how they wanted their steaks. A few wanted them very well done, so Skillet burnt them to show what he thought of anyone who wanted steaks well done. The acrid smoke immediately went through the boat, again blinding and choking us, forcing us to surface again and clean out the air. I happened to be on the wheel at the time and my eyes were so full of tears I couldn't see the compass to steer.

Again we were lucky.

A couple days later our watchfulness paid off when we heard the ships screws approaching with our underwater listening equipment. It was toward evening so we ran parallel to what turned out to be a convoy. When we were far enough away so they couldn't see us we surfaced, sent a message to the other nearby subs, and raced to get ahead of the convoy. A few hours later, and well after dark, we'd gotten there and turned to make a run right down through the middle of it on the surface. We knew that the other subs were on both sides, and would make their runs as soon as we were past them.

This was where our radar made all the difference. None of the ships in the convoy had radar, so even though we were on the surface just ahead of the convoy, they didn't know we were there. I knew the location of every ship in the convoy and could tell which were the troop ships by the shape of the radar returns I was getting. I'd gone to a lot of trouble when we were in Pearl Harbor to find out what various kinds of ships looked like on my radar.

Also, I'd worked out a fast way to get the range on a number of ships in seconds. This helped us plot the course and speed of the ships we wanted to sink,

as well as keep track of all the escorts. When everything was ready we let the other subs know we were on our way and we raced right down through the middle of the convoy, shooting torpedoes as we went from both forward and after torpedo tubes. Then we reloaded as fast as we could and shot more. Ships were exploding all around the place and the escorts were going crazy. Thank heavens they didn't have radar—we never could have pulled that one off if they had.

It was an exciting few minutes.

When we were out of torpedoes we were anxious to go to the nearest supply depot we could, reload, and get back out there again and sink more ships. We were terribly disappointed when we found that we were headed all the way back to Majuro and a regular refit. It was only about 1,500 miles to Guam, and 3,500 miles to Majuro. Phooey. We were out there to sink ships and we didn't want to go back and sit around for two weeks in the sun while the Japanese were sending one convoy after another down to reinforce the Philippines. We were good at what we were doing, and we wanted to keep on doing it. I think the captain made this clear to ComSubPac, but to no avail.

Pass the sugar

We spent our rest period after the 10th war patrol at the Royal Hawaiian Hotel on Waikiki Beach. Some of us devoted our days to taking advantage of one of the most famous beaches in the world—wrestling with the great big heavy solid wood surfboards, and dodging the coral which ran through the sand under the water, slashing any feet not covered with sneakers. I've been there more recently and they've blasted all that coral out so you can go swimming with bare feet now.

Others were much more devoted to "Getting The Overnight Cherry" at one of the many whore houses, by trying to beat the long lines that would form later in the day.

It was a fun two weeks vacation at this luxury hotel, and oh the stories of conquests we had to listen to during our next patrol run. They had a luau for us at a park. No fish and poi, and no wahinis, but lots of beer and hot dogs. There was the usual chug-a-lugging of beer. The party was just for our crew and I took a bunch of pictures.

Then the vacation was over and we were busy stocking the boat with food and fuel for our next war patrol. We stopped off at Saipan Island to top off on fuel and then went on our way toward the Philippines. Along about the second day of this uneventful and therefore pleasant cruise the coffee drinkers began looking for the sugar. "Hey Skillet, where'd you hide the sugar?" After a few hours of this needling, Skillet reluctantly got out of his sack and started looking. He came up with a few packages of brown sugar and sacked out again.

Coffee with brown sugar is a novelty. Unfortunately, there seemed to be only a very small contingent satisfied with novelty and a growing number of coffee with sugar drinkers in need of some Joe to help them keep awake through the night. Skillet finally got up again and went to the forward food locker, muttering to himself at the indignities he had to suffer as head of the galley.

A day later an exhausted Skillet and assistant gave up the search—there was no sugar. It took a good deal of prying by the captain to get the story out of him. It seems that he ordered the food for our patrol run and it had been delivered to the dock at Pearl Harbor. Skillet organized which food went into which food locker. Eventually he had run out of locker space, run out of deck space in the after battery, out of room in the shower stalls, and even out of storage space in the two torpedo rooms. He was out of space. It was well after midnight and all he could think of was that nice comfortable sack waiting for him, so he kicked the few remaining cartons of food over the side and went to bed. It was dark and he didn't know what he'd kicked over. Yep, it was all the sugar for the patrol run.

Our more desperate coffee drinkers went through the brown sugar, then the maple syrup, and then the grape jam and other sweets. From then on it was cold turkey, with no sugar—unsweetened coffee—ugh! Skillet countered a growing movement to throw him over the side during the middle of the night by sticking fast to his sack. After about three weeks, when the serious coffee drinkers (with sugar) were suffering the last stages of sugar withdrawal, we had a lucky break. We got a call from the Icefish begging for some hydraulic oil. We had some to spare, but as the Captain thought over the deal a crafty look appeared and we ended up swapping oil for a couple large bags of sugar.

We met the Icefish in the middle of the night and ran parallel with her. A line was shot over and the oil swapped for sugar.

Rank being what it is, not much of the precious powder made it past officer's country, as we called the forward battery, and the coffee fiends (which included probably 90% of the crew) were out again.

The day before we got back from this patrol run we were, as usual, cleaning up the boat. God, how I hated that part of the patrols. Everything had to be cleaned and polished. I still remember the shouts of joy when one of the crew came across a stash of maple syrup in the back of the garbage locker and everyone knocked off work for a quick cup of coffee with syrup in it—smacking their lips over it.

While most of the crew probably remembers how many ships we sank and things like that—somehow I remember the more important things, like the sugarless patrol run, the pork plethora, the Spam attack, and things like that.

For some strange reason I had little interest in coffee, with or without sugar, so all this was just amusing for me. But then I didn't drink...not even beer. And I didn't smoke. Still don't.

Submarine poetry

In a letter home along in November 1944 I mentioned that I'd just been thrown overboard—not as an expression by the crew, but in celebration of my getting promoted to first class Electronic Technician's Mate (ETM-1/c). This was at Majuro during our second visit to that Pacific Paradise. It was better the first time.

Not having yet taken up Pinochle, I had a good deal of time during the eleventh patrol run to spend doing non-productive things like writing poetry. Here's some of the stuff that has managed to survive the 50 years.

Homesick

I've never been a vagabond.
I've never wished to roam,
Explain then how that I came here
Ten thousand miles from home.

I've read the verse of Blanding
And find I like his work,
But no place that he mentions
Seems better than New York.

I met a girl at Waikiki,
Her hair was golden blond.
Our love was ended when I found
She was a vagabond.

I'm tired of far-off places,
Of Midway and Saipan,
Of places where you cannot sleep
Unless you're cooled by fan.

My post-war plans are simple,
I know what I'll do then.
I'll settle in New Hampshire
And be a citizen.

As might be expected Navy chow is mentioned:

Gourmet

Before I joined the Navy
I used to love to eat.
Each meal was a treasure trove.
The pallet for to treat.

But now I'm in the Navy,
The food all tastes the same
They call it mess, and rightly,
There's not a better name.

Now when I'm feeling homesick
For something good to eat
I dream of brown veal curry

With good big hunks of meat.

A turtle steak is savory,
It's best when cooked in wine.
Red flannel hash is tasty
With pepper sauce on mine.

I never did like fish much,
But gee, two years without
Have left me with a longing
For Horned-Pout, Perch, or Trout.

Now all I've got are memories
Of meals that are long past
Of culinary efforts
Whose memories still last.

The next one is in the realm of artistic appreciation.

I wonder if, when I go home,
I'll ever wish again to roam.
Will I be able to quit the sea?
Will a painting satisfy me?

I know I can never forget the blue
Beauty of an ocean view.
No painting I have ever seen
Has shown the shallow water's green.

And sure enough, as I predicted 50 years ago, I did eventually move to New Hampshire—over 30 years ago.

When I was at Hunter's Point after the 13th patrol run, where we'd returned for a major overhaul, I was downtown San Francisco one night and happened to walk by an art gallery. They had an oil painting with a spot light on it. It stopped me. It was just of the ocean. Obviously the Pacific Ocean. It was the most realistic painting I'd ever seen of the ocean. I was impressed.

I thought about that painting that night and decided I wanted it, no matter how much it cost. The next day I went back and looked at it again. It was a seascape by Willy Hankin (1907) and they wanted \$800 for it. Well, I didn't care, I had to have it. So I wired my folks in Brooklyn for the money, not telling them what I was about to buy, and had the painting boxed and shipped home.

A couple weeks later I was on watch aboard the submarine at Hunter's Point, when the phone rang. It was a lieutenant calling. He said he'd seen the painting in the gallery, had gotten my name from them, and hoped I'd be willing to sell it. He offered me double what I paid for it. I thanked him, but said I wanted to enjoy it.

When he wanted to see it again I explained that it was now in Brooklyn. A few months later my folks wrote that he and his fiancée had stopped by to look at my painting. If I ever wanted to sell it, they were interested.

It's still over the fireplace in my home in New Hampshire and I still enjoy it. I wouldn't sell it for ten times what I paid. When I visit San Francisco I often stop by and see what Maxwell Galleries has on display. They're still in business, and I often see their ads in upscale magazines. So I have the painting of my poem.

I've looked at paintings of the sea in every major art gallery in the world, and I've never seen any that capture the ocean the way Willy Hankin did. This is by far the finest seascape I've ever seen. For me it's priceless—and it brings back, when I sit and look at it, that feeling of love of the sea that I felt 50 years ago. Our English language is terrible when it comes to expressing emotions, so I don't know what else to call it but love.

How can I express the exhilaration I feel when I'm skiing fast down a slope? How can I ever hope to explain how I feel when I'm scuba diving along a reef? How can I communicate how certain pieces of music affect me? Thrill? Joy? Even angst, at times. And the thrill of riding a fast horse that's in perfect communion with me?

Despite my vows not to travel, I've done that a lot. I love visiting new countries. Somehow, I don't much care about going back and visiting the same ones over again, even though I've made good friends in many of them. I want to see new countries. I hope I'll be able to visit at least 200 countries before I see what the next world, if any, has to offer—perhaps the greatest adventure of all.

Speaking of scuba diving, it was the lagoon at Majuro that hooked me on diving. I borrowed a Momsen Lung from our boat so I could dive in the lagoon. The coral and the fish were incredible. A few years later, when the Aqua-Lung was invented by Cousteau, I took lessons at Bermuda and got my certification. Soon I had my own equipment and was diving around Long Island from my own boat. I even had my own air compressor. I hope to get back to Majuro one of these days, put on some scuba gear, and see how the lagoon has lasted.

I've got all the latest scuba equipment now, complete with a diving computer to keep me from getting the bends, and an underwater video camera. I've been diving all around the Caribbean and Hawaii in recent months.

Natsumuri Chono

Despite the hundreds of shit cans dumped on us, plus the propaganda movies and radio programs telling us how terrible the Japs were, most of our crew were fighting the war because that is what one did in war time. I didn't join the Navy to kill anyone, just to avoid getting drafted into the Army. We'd discuss the whole thing now and then, and I found that emotions ran high with very few of the crew.

One goes to work where there is work. The government had set up a system which made it virtually impossible to do anything but be a part of the military if you were within a certain age range. At the time we thought of older people as not being able to hack the physical requirements, but after a few years to mull all that

over I think it was more a realization that a lot of older people were too smart to fall for the con, and they didn't want to blow the deal, so they grabbed those of us who were too young to know any better.

A couple of the crew were surly about the Japs—"Just let me get a chance and I'll shoot the hell out of those goddamn bastards," sort of thing. Even when we were listening to a ship we'd torpedoed go down, complete with the usual breaking up noises as the compartments exploded due to sea pressure, there was a remoteness about our position that made it all unreal. And the shit cans went off with their click-bonng sound without our seeing anything or (usually) hearing anything else—again a very remote thing for us.

One day, when things were as dull as they usually were, we spotted a small boat chugging along. We knew that the Japanese were having trouble getting supplies to their many small islands since our subs had sunk so many of the ships. Their submarines were doing what they could to bring supplies, but it was a big job, so much of the supplying had to be done with very small boats.

We closed in on the boat and rigged for "battle surface." This meant getting out the 30 caliber machine gun and limbering up the 4" deck gun. Someone somewhere got the mistaken notion that submarines could stand in for destroyer escorts, so later we got a 5" gun, but we had no delusions about using the damned thing. If what we tackled required more than a 4" gun we had no business shooting at it. Make that a 2" gun.

I was operating the radar, giving ranges as they opened up on the spitkit with the deck gun. This was my first experience with following the shells out with the radar as they were fired. I found that I could give them their actual range as well as the range they should be shooting with each shot, right down to a yard or two. When they hit the boat I saw the wood flying on my radar screen. Then I could see the people swimming around that had jumped overboard. We shot a few more rounds and sank the boat—then we went over to the people swimming and offered to pick them up. I watched this through the periscope. Several of them turned their back on us and refused to be saved.

One chap said what the hell, maybe they don't torture people as much as he had been told, and dog paddled our way. We fished him out of the water, lifted him to the main deck, on up to the cigarette deck on the bridge, and then down the hatch. He was so terrified he couldn't see where he was going. We finally coaxed one slightly wounded chap to come aboard. One thing I remember clearly was that those chaps who had been promising to shoot the hell out of those dirty lousy yellow bastards were down there hollering the loudest for them to come and be saved. I didn't see any waving of guns around or taking pot shots at the swimming Japanese.

The wounded chap, a Korean, got repaired by the pharmacists mate, but he was neither friendly nor cooperative, so we kept him locked up in the forward battery. The other chap was quite friendly and anxious to do anything he could to ingratiate himself. He was quickly put to work cleaning the after battery, washing dishes, and other odd jobs. He was small enough so he could squat down and walk under the dining room benches to clean. His name was Natsumuri Chono. I won-

der if maybe he has a Japanese restaurant in Nebraska today?

I thought about that shortly after the war (1946) when I met a WWI German submarine captain at a party. He'd been captured and brought to America. After the war he stayed on and was the owner of the Red Ball Freight Lines when I met him. I also met the nine-year old daughter of the host and hostess at the party. We were married almost 30 years to the day later. Still are.

Once we'd used enough of the condensed milk supply to free the shower stalls, we could start taking showers. We had to conserve water because the evaporators would only crank out about 35 gallons each a day each. So when we showered we would get wet, lather up, then rinse quickly. When we suggested that Chono take a shower he made it clear that he didn't want to do this unless we had enough water.

Some of the crew were emotionally upset over taking showers in the condensation water from the air conditioning machine. Water was water, as far as I was concerned, so I used it without worrying. As a matter of fact, I took particular delight in making orange drink or lemonade using the condensation water, being sure to offer it first to the fellows who were the most voluble about not taking a bath in the sweat off someone else's balls. They loved the orangeade.

Chono taught us a few words in Japanese and we worked hard to teach him some English. We hated to turn him over to the military police when we got to the end of our run in Hawaii—he was the best dish washer we ever had. He would just go to waste in a prisoner of war camp. After all, he didn't eat very much, and didn't have to be paid on payday.

Chono did get a bit panicky when we were being shit canned, but then so did some of the crew. Not everyone was able to sleep through those events like Skillet.

Life in a rest camp

Majuro was about as restful as they come. It was a beautiful coral atoll with a lagoon that was a skin diver's heaven. I think we all enjoyed our first visit there after the ninth war patrol.

That patrol was fairly uneventful—we joined several other submarines in circling the Ogassawara Gunto, also known as the Bonin Islands—you may remember the battle and flag-raising on Iwo Jima. The submarine exercise was called Dunker's Derby and the main purpose was to keep supplies from being run into the garrisons on the islands, which were scheduled to be invaded soon afterwards.

Not much could get through the submarine blockade, so they must have already piled up the defense arms because Iwo Jima was one of the more bloody American "victories."

Since the eighth patrol had been so hectic, with the loss of the conning tower to depth charges, mainly due to the captain's stupidity, several of us suspected that the trip up around the Bonin's was probably not one of the hotter spots they might have given us. If that was the plan, it worked fine—it certainly was not a hot spot and the *Drum* turned in zilch sunk for all our time and effort. Frankly, we preferred action.

After a vacation cruise like that, two weeks of rest at Majuro was not really

necessary. Except for massive amounts of boredom, we were as much rested at the end of the patrol as at the beginning. The peaceful patrol was probably a good idea for crew members who had been through the loss of the conning tower—an event which made a few of them overly nervous. Well, it *was* a close call!

Few of us will forget the breakdown of the pharmacist's mate at Pearl. He'd been out drinking and one night he decided that there was no way he was going to go through anything like that again. He made quite a scene about it, running from one end of the boat to the other, screaming. Several of us got him in hand and the captain had him taken to the base dispensary. The next we heard from him was a postcard from Sun Valley, Idaho, saying he was having a great time. I've always suspected that he knew exactly what he was doing and put on a show for us. A pharmacist's mate would know just how to handle that sort of thing.

Outside of the poker games, the crap games and the *gilly* drinking, life on Majuro was quite restful. There were ball games, beer in the afternoon, and movies every night. The ice cream stand opened right after the movie and that was one of the highlights for me. I quickly figured out how to beat the system and so I could be first on line for gedunks, coming away with a couple in each dungaree jacket pocket, while the rest of the guys had to stand in the long, slow line that quickly formed behind my co-conspirator.

What I did was get together with a short buddy. As soon as the movie was over I'd rush up to the gedunk stand and get everyone to step back while I officiously swung the plywood board up to open the stand and hooked it into place. Meanwhile, my short buddy would duck under the board and place our order. It worked every time. Ice cream (gedunks) were 10¢ a cup.

Majuro has one of the most beautiful beaches anywhere. The temperature was ideal, the water fabulous, and hardly any rain while we were there. Now and then there would be a short passing rain squall, but it would be over in a few minutes, leaving everything clean and sparkling.

Diving masks hadn't been invented yet, so I modified one of our Momsen Lung units into a mask and went diving in the crystal waters of the lagoon. The coral was gorgeous and so were the fish. That was my first coral reef diving experience and it made a scuba diver out of me for life. Later, I was one of the first to get an Aqua-Lung when they were invented, complete with my own air compressor, and go diving around Bermuda.

Every now and then the *gilly* drinking led to some fights. I managed to get involved in one of these on our second visit to Majuro. None of us were very enthusiastic about that second visit. The first one had been okay, but our next rest after that had been at Honolulu and the Royal Hawaiian Hotel on Waikiki Beach, so Majuro was one hell of a letdown by comparison. This led to much more grim gambling and a general low tone. We'd had a very successful run and we were far more anxious to stop at the first place possible to reload on fuel, torpedoes and ammunition, and get back out there where the convoys were. Given the choice of action or rest camp, most of us opted for action.

As we headed back from our action-packed eleventh run the news that we would not be able to just stop and load up quickly was bad news indeed. Even

worse was the news that we were headed for Majuro rather than Pearl or Brisbane. Monopoly just is no substitute for girls.

By November of 1944, when we reached Majuro for the second visit, the place was obviously falling apart. Several of the Quonset huts had seen little use since our visit six months earlier. Our old hut was pretty much just as we'd left it.

Along toward the end of this "rest" I remember sitting in the Quonset hut talking with a couple fellows when Ruebush came in. He was saturated with *gilly* and mad about something. Suddenly he was angry at me and he pulled out his hunting knife and threw it at me. Having spent a lot of time fencing in high school, my reflexes were fast and I warded off the knife with my left arm. It bounced to the floor. My immediate reaction was that I was glad the handle of the knife had hit me instead of the blade—then the blood started to pour out—ooops, it *was* the blade that had hit me.

I was so surprised I didn't know what to do for a moment. It was obvious that if I hadn't caught the knife with my arm it would have gone into my chest, right about the heart area. Instead, I had my arm cut down to the bone and there was a hole in my dungaree jacket sleeve. In short order I had a tourniquet on the arm to slow down the bleeding and was on my way out to the submarine tender for repairs. They sewed up the cut without any anesthetic—my that smarted—and sent me back to continue my rest.

Ruebush was put in the brig on the tender and left behind when we sailed. The captain explained that I had every right to push charges against Ruebush, but that he had no good replacement available for me and in order to make the charges I would have to transfer off and wait on the tender. So I went with the *Drum* and I never heard what happened to Ruebush. When we started having yearly reunions in the 1970s I was not anxious to run into him again, but he was listed as having died, so it'll be a while.

I don't know why he was mad at me—we'd never had any arguments, or even talked with each other much. He wasn't a player in the pinochle, Acey-Deucey, or cribbage playing. That was a close call!

Celebrating the Fourth

As a special present, the Navy ordered us to pay a short visit to tiny Jap-held Fais Island, way out in the middle of the Pacific Ocean, a couple hundred miles east of Yap. It wasn't near anything. Shelling an island was a great way to spend the 4th of July.

We came in on the surface and pulled up near the buildings which made up the phosphate plant and got everything ready—the two deck guns, the machine guns—and we spent about twenty minutes wrecking everything in sight. I was stuck inside the conning tower, so I had to watch what I could via the periscope. My radar was even better, for I was able to give the gun crew the exact ranges of the buildings and then follow the shells in on my scope and tell them precisely how short or long their actual range was. Since the Japs didn't shoot back it was fun. If they'd had one gun of any size we'd have been sitting ducks. Even a small machine gun

could have wiped our deck clean. But, as it was, it was fun—for us. None of us will ever forget the Fourth of July 1944.

Once we'd shambled everything in sight we got the hell out of there before someone on shore found a gun and started shooting back. We were close enough so even a pistol could have picked someone off on deck.

The time I saved the boat

This happened along about our twelfth patrol run. We had a bunch of the new electric torpedoes with us and we thought they were great. Imagine, torpedoes which didn't leave a wake or be heard as easily as the old ones when they were running! We had a lot of confidence in them—up until we used 'em. Our old torpedoes ran on steam, so they left a trail right back to us as they ran, and made one hell of a racket.

One day we were running submerged, scanning the horizon through our periscope for ships. Suddenly our first target appeared. It was a convoy with three ships, and wonder of wonders they presented an overlapping target as we looked at them through the periscope. Wow, there was no possible way we could miss a target like that! We got everything lined up perfectly, fired all six fish from our forward torpedo room at them, spread so as to hit all three ships. Then we waited anxiously for the explosions. A couple of them finally exploded, but so long after firing that we knew they had gone under the ships and exploded somewhere beyond them.

Their escorts quickly figured this all out and headed right toward us and dropped a bunch of depth charges on us for our trouble. We found a temperature gradient to hide our movements from their sonar pinging and got the heck out of there, mad as hell at our new torpedoes. The gradient acts like a mirror, reflecting the sonar signals back to the surface.

A few days later we were on the surface and came on another ship, complete with escort. We fired about three more fish at it and then turned and left as fast as we could. These fish also went too deep, going under the ship. The escort quickly came after us. We ran for about an hour, going all ahead flank, but the escort was rapidly closing in on us, so we had no choice but to dive and try to dodge them under water.

I was in the crew's mess when the diving alarm sounded. I jumped up and headed on through the control room and forward battery on my way to the forward torpedo room to lower the two the underwater sound heads. This was my job whenever we dived.

Just as I was passing through the control room I heard the bowplanesman report that the bowplanes were on full dive and jammed there—he couldn't get them off. I could see where this would be bad news, heading us rapidly for the bottom of the ocean, about a mile away. Or maybe a loop-de-loop—a first for a submarine. I kept running, without missing a stride, and when I got to the forward torpedo room I yelled to the torpedomen that the planes were stuck. No one had gotten on the intercom phones yet, so they hadn't received the word. One of the

torpedomen grabbed a pry bar, climbed up over the bunks to the bowplane mechanism and pried the planes loose from where they'd been jammed. By this time we'd taken a serious down angle and were headed for the bottom. By the time the bow planes were back on full rise and we'd pulled out of our plunge we were down well over 450 feet. Then we had a steep up-angle and were heading back toward the surface. We broached and then headed down again, this time leveling off at around 250 feet. The *Drum* groaned, but nothing gave way.

I don't know how many of the crew were aware of what a close call we had. Everyone noticed the down angle, but not a lot was said about the new test depth for a 300-foot boat. My being in the right place at the right time and reacting quickly saved our bacon.

The ensuing silent run and what seemed like an endless depth charge attack took our minds off the bowplane problem. It was incredibly hot this time because we had been running flank for maybe an hour or so and the main engines were very hot—and that quickly heated up the whole submarine. Add to that the nervous heat of 83 men and you have onew heck of a sauna. Before long sweat was slopping around the decks.

We'd learned our lesson the hard way, so from then on we ignored the rules and started setting the depth of the electric fish for zero instead of following the Navy instructions to set them at six feet. Then we finally started getting some hits. They did not broach. Obviously something was wrong with the damned things since they seemed to run at two to three times their set depth, making us miss at least four ships we might have sunk otherwise.

Though we'd made hundreds of dives, we'd never before dived while running all ahead flank. So that's what jammed our bow planes.

Music soothes

We had an all-band radio receiver (NRAO-7) for tuning in Tokyo Rose, plus a connection to it so we could play a record player through its audio system. I'd brought a box of 12" classical records (78s) with me, but somehow I got almost no encouragement to play them. I sure didn't convert many of the crew to classical music.

Artie Kash had a bunch of his hillbilly records with him and they were a lot more popular—a whole lot. By the time the war was over I'd heard so many Roy Acuff, Bob Wills, and Ernie Tufts records that I was converted and I started my own collection. I still like all those old favorites and can sing many of them.

On one patrol run I decided to wire up the bunks in the after battery so we could listen to music while resting. I ran wires all through the compartment and managed to get enough earphones from the sub tender so most of us could listen to the radio or records while sacking out. I also fed the music up to the conning tower and had a jack near the radar so the operator could listen to music while he was watching for ships or planes to pass in the night.

While I was feeding the radio signals around the boat I ran a special cable to my bunk and hooked up the test oscilloscope so I could watch the radar from my

bunk. It was nice to be able to check and see what was going on up in the conning tower from down there when something was spotted. I could only watch the "A" scope, so it wasn't as helpful as watching the PPI (plan position indicator), which showed what was really going on. After a few days I gave up on that, but it was fun doing it.

Actually I had my sack rather well furnished. As a newcomer to the *Drum* I was given one of the least attractive bottom bunks. It was hotter and had less room than most others. It didn't take me any time at all to get used to it and fit it out for comfort. By the time we left Pearl for my first war patrol I had the space under my bunk packed with cans of pineapple juice, which I'd bought. Not having been to sea before, I didn't know how well stocked the boat would be with my favorite juice, so why take chances? It turned out that I was right—I had plenty of pineapple juice long after everyone else ran out. I remember George Lytell, the black chap who ran the officer's mess, coming back and making a deal to get me a veal curry dinner if I'd swap some pineapple juice for it. Being a curry fan, I went for it. Curry wasn't on the peon menu, just the officer's.

The only blacks in submarines, as far as I could see, were mess attendants for the officers.

I hooked up a very powerful fan from my radio transmitter spare parts just across the passageway from the head of my bunk to cool it off on those hot nights near the equator. I don't know what I would have done without it. It was so powerful that I almost needed straps to keep me from being blown to the foot of my sack. It cooled not only me, but the chap in the next bunk beyond my feet. The only problem was when an electrician would go down into the after battery to check the cells, the hatch into the battery area blocked my fan and I had to suffer until the battery readings were completed.

In addition to a light for reading, earphones to listen to music from the crew's mess, and the super fan, my bunk was close to my expanding locker collection. I started out, like everyone else, with a single small locker about one cubit foot in size. After my first patrol run and a change of crew this grew to three. I cleaned out a lot of the radio room lockers, throwing out the big, wasteful metal boxes used for spare parts storage, thereby gaining several more lockers.

The Momsen Lung locker was a great big one, around ten cubit feet, and just across from my bunk. Just what I needed. The chances of our being sunk in the right depth to be able to use a Lung seemed remote, and besides I knew too much about the radar to be permitted to be taken prisoner, even if we did get sunk in shallow water, so obviously I had zero need for a Lung. I sort of moved them umm somewhere else and expanded my domain—filling this new big locker with my stuff.

By the time I was separated from the *Drum* at Hunter's Point my control of the locker space was awe inspiring. I shipped home a dozen sea bags full of clothes and blankets, plus a half dozen good sized foot lockers. I probably didn't need two dozen pairs of dungarees and three pea coats. The dozen or so blankets have come in handy down through the years. I didn't travel light—with a complete portable hi-fi system, including my own home-made record player, several cases of records,

a shelf of books, cameras, boxes of pictures, etc.

As far as I know, I was the only one on board who took pictures. I snapped them everywhere we went and processed many of them with my own film tank and developing system. The temperatures weren't always right, so some films left something to be desired. I sent many of the negatives on to Honolulu for Kodak Hawaii to print for me and almost everybody got a set of pictures when we stopped off at Pearl on the way back to Hunter's Point.

I still do not travel light. When I moved to New Hampshire some 30 years ago it took a large rented moving truck five trips to move my stuff up here.

After I was detached from the *Drum* I was put into the relief crew at Hunter's Point for a while. I kind of missed the barge they gave us for the *Drum* crew, with its daily box of lettuce, a box of eggs, bread and butter. I got real used to those scrambled egg sandwiches—loved 'em. We had a box of apples, which went well with the egg sandwiches. That was quite a time for me—drunk every night and egg sandwiches during the day.

It didn't take long for those of us who transferred from the *Drum* to contact our old captain, Commander Rindskopf, in New London and let him know we were available. The next thing we knew we all had orders to report to New London. There I taught radio school for a few months until the war was officially over. In a way we all missed the *Drum*, but when we found that the war had ended before the *Drum* could make another war patrol we all felt better about being ashore.

Let's kill Green!

Outside of a few dozen depth charge attacks, I only had a couple times when I had close calls. One was at the Mare Island Navy Yard, and that was as close as I ever want to come. We'd brought the *Drum* back to get a new conning tower to replace the one cracked open by depth charges on the eighth patrol run.

It all seemed routine. It was time for me to get a booster on my tetanus shot. I reported to the dispensary and explained to them that I was allergic to the regular anti-tetanus serum, so please give me the stuff that's not made from horses. They said sure, we have some right here. Okay, but how about giving me a test under the skin of my forearm, just to make sure? No problem. They shot about half a drop under the skin and I went off to wait the required half hour to see if there was any reaction.

When I came back my arm was all okay—the test was fine. There was no sign of any swelling. "We've put the serum away until after lunch, so come back then for your shot." I went off to the mess hall for lunch.

An hour later I reported back to the dispensary. My arm was swollen to almost double its normal size and so puffed up that I couldn't even bend it. They'd made a little mistake and the serum they'd tested was horse serum. If they'd given me the shot before lunch I would have been dead within an hour.

I'd found out about my allergy to anti-tetanus the hard way. When I was in the sixth grade I'd torn the skin of a finger on a nail sticking out of a fence on my way

to school. It was a nasty cut so the school nurse called my folks. My grandmother was home and came and took me to a doctor just around the corner from our house. He sewed up the cut, which was around 3/4" long, and gave me an anti-tetanus shot, just in case.

Within an hour I passed out and I was in a coma for most of the next three days. The doctor apologized for not testing me first for an allergy, just to make sure. He said that if I ever got another shot of the serum I could well die, that it had been close. From then on, when I had to have an anti-tetanus shot, I made sure that it wasn't the normal horse serum kind.

So that and Ruebush's knife were my two closest brushes with death. Compared to those, the depth charge attacks didn't even come close.

Honolulu

The big Luau was on August 25th 1944 and we all had a great time. Hot dogs were substituted for fish and poi, and beer for distilled coconut milk.

We were all put up at the Royal Hawaiian Hotel—sumptuous quarters indeed. There were four of us to a room, with Carmean (TM1/c), Kellet (C1/c) and Phillips (TM3/c) sharing my room. We had a lot of fun during that Honolulu visit. There were twin beds and a double bunk and a balcony that looked out over the ocean where natives were surfing every day. Several of us tried surfing, but the big heavy boards they used those days were exhausting to paddle around and we got all over thinking of it as fun after about an hour.

Being a pineapple fan I managed to drink a lot of pineapple juice during our visits to Honolulu. They sold chilled cans of it out of stalls on the streets. There was even a stall selling it on the base at Pearl Harbor.

The auxiliarmen

The air conditioning on a submarine is of more than casual importance. In the warmer oceans you either have air conditioning or you are miserable. Most of the time the auxiliarmen would keep the air conditioning equipment running just fine, but now and then something would break and the boat would warm up. Really warm sometimes.

When we'd run silent the air conditioning would be turned off, along with everything else that made any noise, and the temperature would soar, bringing on comments such as, "That air conditioning is putting out the best it has in weeks." Or, "It feels like you have both air conditioning units working."

Furman, our Chief Auxiliaryman, took a lot of ribbing because he always slept with a blanket on—"just to make the rest of us think it was cool," the comments went. "You used to need three blankets here to keep from freezing. Now, with Furman, I have to have a fan running over my back so I won't melt away." To which Furman would reply, "You're a liar, you never had to have three blankets—if you don't like the air conditioning I'll turn it off and then I'll listen to you cry."

That darned periscope well suction

One of the perils of working in the conning tower was the presence of two virtually bottomless pits, right in the middle of the place—the two periscope wells. These holes were about two feet in diameter and reached right down to the keel. The periscopes filled enough of the holes to keep people from falling in, but there was plenty of hole left to attract almost anything which got loose in the conning tower. It was like a magnet for anything which might get put on the chart table—even a large roll of blueprints managed to roll off the table and fall down the well one day.

It was possible to get into the bottom of the wells and remove the larger or more valuable items, but it sure wasn't easy. There were a bunch of bolts and gaskets involved, all in virtually inaccessible places which were well protected by hot machinery down in the pump room. Thus, when I'd lean over for something and screwdrivers, wrenches and other assorted shirt pocket tools would go dancing down the wells, I just made a note to order extras the next time we were in for refit. I'll bet there are still some rusted remnants of my sleepier repair jobs down there.

I think it was McFadden, our Pharmacist's Mate, who had the record for a hole in one with dark glasses—all the way from the bridge hatch, almost six feet away!

Rubber pancakes

Then there was "straight gut" Foxworthy and his monumental breakfasts. I recall his sitting down to a dozen very large pancakes and anywhere from a half dozen to a dozen fried eggs with them, plus a plate of sausages.

Someone cut a rubber gasket to go inside an oversized pancake one morning. The rubber disk was the size of an ordinary pancake and the finished product was certainly fit for Foxworthy—who doused it with melted butter and syrup before trying to hack his way through the pile of other pancakes and eggs on top of it. Skinny Ginny's pancakes were never the pride of Aunt Jemima, so Foxworthy didn't notice that anything was wrong at first. The rubber gasket turned out to be just enough tougher than the pancakes so Foxworthy discovered the prank. I think he was alerted by the side looks and muffled laughs from everyone else as he vigorously hacked away.

Some of the crew breathed easier when Foxworthy found the gasket—they were afraid he might go ahead and eat it without noticing anything.

Our cooks

We had three of 'em—Skillet, Fry and Skinny Ginny—cooks first, second and third class. Ginny said he'd been to cook's school, but none of us believed him for a minute. He couldn't even open a can and have it work out right.

Skillet (Kellet) set things so Fry and Ginny would alternate days, while he

would do the baking, which was the easiest job. This resulted in good food one day and absolutely terrible the next, a problem which did not affect Skillet much since he fixed all his own meals. He set up a leisurely schedule for himself. He would sleep all day, thus managing to miss Ginny's breakfast and lunch debacles. He'd get up in the evening, after Ginny's "dinner" and fix something to eat for himself. Then he'd play pinochle and Acey-Deucey until about five in the morning. About two hours of furious baking would produce the bread and pies for the day. Skillet would then make a quick breakfast for himself and head back to his sack for the day. Tough life.

The crew put up with that for a whole patrol run and then decided that they'd rather have bum bread than bum chow, so Skillet had to swing into the alternate day of cooking schedule with Fry, while Ginny went to the baking routine. Ginny's baking was a continuing source of amusement—though he eventually did improve. It kept us from eating too much bread and pie.

His first efforts at making bread resulted in a wide variety of textures, running from a consistency of corned bread right on through to cement. It was not unusual to sit down to breakfast and have a two inch high loaf of bread passed to you. And when the damned dough had risen there would often be an immense hole in the middle, with the rest of the dough as solid as his two inch loaves. One of his cakes was used as a cushion in the after engine room for a few days, but they finally threw it overboard because it was too hard to sit on comfortably.

Over the bounding main

Is there any other ship that rolls like a submarine in a heavy sea? The damned things pitch and roll so randomly you never know which way to lean in anticipation. The result is that all of us sort of bounced down the passages as we moved about the boat, banging into one bulkhead and then caroming off the other.

The problem is that submarines don't have any keel worth mentioning, so there's nothing to keep them from rolling with the waves. And pitching.

I remember one day during our weekly fresh water break for baths—I was shaving, or at least trying to. There were two basins, each with a mirror over them and I would slide over to one, take a stroke with the razor and then slide back to the other side of the compartment, taking the next stroke with the other mirror.

The conning tower lashed around even more than the rest of the boat, sticking up in the air like that, so you had to really hold tight when you were passing through it or were up there trying to steer the boat. A wave would come along and swing the boat ten degrees off course and just about rip the wheel out of my hands.

During these heavy seas even some of the old salts would start turning green around the gills. I remember more than once when we had to submerge in order to be able to eat a meal in peace. This also helped those with queasy stomachs to down some food. When we tried to eat while on the surface we'd have to grab our plate, coffee cup, and the service plates to keep from ending up with a lap full of food. Every now and then we'd heel way over, going beyond 20 degrees, and someone would miss a plate. I got a bunch of beans and coffee dumped on me one

lunch when the fellow next to me lost his balance and didn't grab his plate and cup fast enough on a deep roll.

Sudden rolls while the cooks were getting lunch ready would sometimes result in a loud crash in the galley as pots and dishes of food hit the deck, followed by a louder than usual string of curses. We didn't know then that Skinny Ginny was in the habit of just picking up the spilt food and putting it all back in the pot.

I remember one day when the seas were rough and a chap at the next table suddenly threw up. It ruined the plate across from him. The chap next to him separated the few bits of vomit from his plate and continued to eat.

For some reason I've got an iron stomach and nothing ever seems to bother me. The only time I remember getting motion sickness was when I was going to school at Treasure Island and was drafted for shore patrol duty. My duty turned out to be at the amusement park, out by the San Francisco zoo, just down from Seal Rocks. It's gone now, but it was fun while it was there.

Part of the deal, the manager of the park explained, was that I could eat all I wanted while on duty. As a known eater, this was great news. I quickly downed a couple pieces of cherry pie with ice cream, and a couple glasses of milk for starters. Then I started doing my duty, which was to keep any too exuberant sailors in line. When my partner and I passed the Tilt-a-Whirl, a ride with round cars that spun as they went up and down around a circle, three girls yelled at us to join them. Well, it was free and we hadn't seen any drunk sailors yet, so what the heck. The girls grabbed out hats to keep us from getting off the ride. After three rides I was sick enough so I didn't care if I had my hat or not. All that pie, ice cream, and milk had been sloshing around inside me.

The worst part was that I got so sick that I couldn't take advantage of the free food after that. The girls eventually gave me back my hat, but they sure ruined my evening. Somehow I lost my enthusiasm for going on any other rides.

I've been on boats where everyone else was just about dying from seasickness, with me feeling nothing. On my first trip to Pearl Harbor from San Francisco in 1943 on the heavy cruiser *Baltimore* I was surrounded by over a thousand sailors throwing up...a sound no one that has heard it will ever forget.

Two sailors that couldn't wait for the long lines leading to the heads, threw up over the rail and were washed overboard. With the possibility of Japanese submarines in the vicinity, the ship wasn't about to go back and pick them up. Tough luck.

Switchboard LaBoeuf

After about three patrol runs of being on my own servicing the radar, sonar, and radio equipment, we took on a radar officer (Roach), and a second class Electronic Technician's Mate, LaBoeuf. Since neither of them seemed to know much about our electronic equipment, I didn't pay them a lot of attention. They were both nice chaps, but they were on different watches from me, so we didn't get to know each other much. Well, for that matter, the officers were very careful not to mix or talk with the enlisted men—the peons, as we considered ourselves in the relationship.

We did have one officer that would occasionally go out drinking with some of the crew members when we were in San Francisco, but he was reprimanded for his fraternization. Officers were the aloof aristocracy and we, the crew, were the unwashed. Since we were supposed to obey their orders without question, I suppose this schism between the two was considered necessary.

Anyway, this also prevented any discussion between me and Roach, so I knew little about him. I doubted that officers had had much real electronic training, so I didn't feel I would be able to depend on him should any difficult problems come up with our equipment.

On this particular patrol run I had the 12-4 watch, which I liked. On this run, as usual, we were on the surface at night with our radar running, looking for targets...like Jap ships or incoming black-cat bombing planes. Most of our patrol runs were close enough to Japanese territory so we had to run submerged during the day and on the surface at night, recharging our batteries. I counted up the hours I had submerged one time and it was way over 10,000 hours.

During the day we'd stick up the periscope now and then to look around, but mostly we depended on our underwater sound to find targets. I suppose I should call it sonar, but we never used it for searching for targets, just for listening. The last thing we needed to do was start pinging and be heard for 50 miles or so. We just snuck around with our ears open.

Anyway, one day I woke up and went to the conning tower to see how things were going. I'd gone to sleep right after LaBeouf had relieved me from the watch at 4 am. When I climbed from the control room into the conning tower at 11 am I found LaBeouf sitting there with the SJ radar units spread out all around him. He had it all apart!

It turned out that the captain had come up to radar depth around 7 am and asked LaBeouf to take a sweep with the radar and see if he could pick up any ships. We'd do that occasionally in enemy-controlled waters since the radar could give us a longer range look than the periscope. But we didn't dare stay up for long because there were too many planes looking for subs. When LaBeouf went to turn on the radar it didn't work. Oh, oh.

He called Roach and the two of them got busy trying to find what had broken. They'd been at it for four hours when I got there. LaBeouf was in the conning tower testing the control cables going to the pump room, down under the control room. Roach was down there with the other end of the cables, and the two of them yelling back and forth as they tested one pair of wires after another.

I asked LaBeouf to tell me exactly what wasn't working. Well, it was the radar transmitter. Hmm, is the hand key closed? When I saw the anguished look come over his face I knew that was it. Sure enough, just before we dove in the morning they'd had a radioman up there using the hand key for a Morse Code contact with another nearby submarine using our radar and when he finished the contact LaBeouf had shut off the radar as we dove. He'd forgotten to close the switch on the key so the radar transmitter would work when he turned it on again.

From then on he was known as "switchboard" LaBeouf.

I got Roach to put everything back together in the pump room and LaBeouf to

put the radar back in its cabinet, and everything worked fine...once the hand key was closed. The pump room is cramped and filled with hot machinery, so Roach wasn't as amused as the rest of us. You don't walk around down there as much as crawl around, and the SJ motor-generator wasn't located for easy service.

Midway

We stopped off at Midway one time on the way back from a patrol run. We were only there overnight, so I didn't get to see much of the island. I did get to watch the famous goonie birds, but they wouldn't let me take pictures of them. One of my classmates from Bliss Electrical School, who'd gone through the school at Treasure Island with me, and who was on the Barb, was there so we had a great time catching up. We saw *The Yellow Rose of Texas* that night on the submarine tender. Dittmeyer, our radioman who replaced Jones (my tormentor) when he was transferred off, had been on the Barb, so we had a common friend.

Give me liberty!

When we rested and recuperated at the camps on Majuro and Guam, there wasn't a lot to do. We played poker, drank gilly, played some baseball, watched movies at night, played Monopoly, and loafed. But when we got to San Francisco, that was something else. There we went on liberty almost every night, and that generally meant going to bars and drinking.

For some reason I'd never had much of an interest in drinking. Part of it had to do with my not being much influenced by peer pressure, so I didn't drink beer and smoke, just because other kids did. Oh, I tried smoking, but it was unpleasant. I tried drinking beer, but it tasted awful.

Another reason for my not drinking and smoking might have had to do with my father, who did both—a lot. I was so angry with him for the vicious beatings he'd given me as a child that I was damned if I was going to be anything like him. He loved fishing—I hated it. I didn't even get interested in flying until after I'd been through a thorough mental refurbishing and gotten over this anger.

Now I know that it was a reaction to the beatings that so depressed me through my teen years. Recent studies by the University of New Hampshire have shown that childhood beatings are often behind teen suicides and depression.

After we got back from the 13th patrol run I went home for a two-week leave. I'd decided that if I was going to be one of the crew I'd have to learn to drink, so I carefully tested all of the stuff my father had in his liquor cabinet. The least objectionable was a combo of rye whiskey and Coca-Cola, so that's what I started drinking when I got back to San Francisco. It didn't taste good, but I could drink the damned stuff.

I remember a bar out on Geary Street that had a country singer we enjoyed. I learned some great songs from him that I still know and sing.

Then there was The Irisher, downtown San Francisco. There would be a *Drum* contingent there almost every night. I remember one night when Baby Duck (Olson)

was there with an enema bag full of beer and making everyone coming into the bar drink from it.

Many a night I'd get back to the barracks and spin into my bed. Being scientific by nature, I always kept count of how many shots of whiskey I'd had. I had a pen and made a mark on my wrist for each drink. Along about five I was feeling fine. My limit was usually around 15 shots.

After I got out of the Navy I pretty much stopped drinking. I had a gal friend that loved beer, so I tried hard to get to like it, but never succeeded. I discovered whiskey-sours, and found them better tasting, but I never could get used to the lowering of my ability to think that accompanied even one drink. It felt as if each ounce of whiskey was knocking about 25 points off my IQ.

I spent a good deal of my liberty time in the San Francisco USO. They had a record player and classical records upstairs and I spent many hours on weekends listening to music. I went to the San Francisco symphony concerts too.

I'd always enjoyed classical music, so this wasn't anything new. When the War started and my ham radio hobby was stopped for the duration, I started buying records and building high fidelity record players. Then, when I joined the Navy I used to listen to the classical music hour while I was at Bliss Electrical School. I'd listen until 42 seconds before the next class would start, giving me 40 seconds to get there before the bell rang.

On Treasure Island I had a little portable radio on my bunk and listened to the classical music program there every afternoon. I even kept a log, which I still have, of every piece I heard. I brought 50 of my own classical records with me on the *Drum*. Since I was about the only one on the *Drum* who liked classical music, I didn't get much of an opportunity to play my records.

Jones, one of the three radio men, hated me. I didn't know why for a long time, but eventually I found out what had happened. His hero was Don Vaughn, the chap I replaced when I came aboard. Don had been transferred off the *Drum* so he could go to Radio Materiel School and become an Electronic Technician instead of a Radioman. Jones adored Vaughn and looked on me as having in some way been responsible for Vaughn's leaving.

Jones, in addition to being surly, expressed his anger by little things like folding my classical records in half. That reduced their value considerably.

By an odd stroke of fate, when I transferred off the *Drum* after five war patrols, Don Vaughn was the one who replaced me. But Jones was gone by then. I think he left after the 11th patrol run. I'd gotten fed up with his hostility and asked Captain Rindskopf to transfer me. He wanted to know what was wrong and I told him. He said he wasn't about to lose me and the next thing I knew Jones was gone. He was replaced by Dittmeyer, who'd made several patrol runs on the *Barb*. The Tech on the *Barb* was an old buddy of mine from Bliss Electrical School.

I got along with most of the crew. Oh, there were a few that I didn't like much. When we'd get short of some particular food—like hot cocoa, for instance. I got angry when Meyer grabbed all that was left from the galley and hid it in his locker.

I told Meyer off again when we got a big box of hard candy at Christmas. There was one kind of candy in the box that everyone liked particularly well, so

naturally he went over and started picking every one of them out of the box for himself.

Nick names

Most of us called each other by our last names. I had a tough time when I went to the first reunions and first names were being used. A few of us had nick names, like Skinny Ginny, Junior Wentz, Skillet, and Tripod Watts. Mine was "Ma" Green. Well, I was like a mother. Once we had an ice cream machine installed aboard I would make ice cream for everyone now and then. Or I'd bake a cake. I made some red flannel hash one time. I'd often make orangeade or lemonade and stacks of tunafish salad sandwiches. I don't recall anyone else doing things like that.

Censorship

Our letters home were censored by the officers. We weren't permitted to let our folks know where we were or where we'd been. Some of the crew had codes to let their folks know, but I didn't have to. Good friends of my folks in Brooklyn would let them know by reading their son's school newsletter. It seems that Captain Rindskopf had gone to that school and was writing back, telling them where he'd been. His letters were printed in the school paper and my folks found out exactly where I was this way.

What am I doing here?

During some of the eons I spent staring at my radar screen, watching for targets to appear—or standing at the wheel, my mind wandering as far asea as the course I was steering—I'd think back as to how I'd gotten myself all this.

A couple years before I'd been peacefully going to college, like any middle-class American kid is supposed to do. My high school interest in amateur radio had derailed my vague plans to go to Dartmouth and get a law degree. Instead I'd found myself at Rensselaer Polytechnic Institute in Troy, NY, as an EE student. Well, I was young and didn't have the benefit of any significant parental advice, so I didn't know any better.

I'd never really given much thought to what I might do for a career. The subject never came up in school or at home, so I just went with the flow, waiting to see what was next.

When I was graduating from high school they brought in some career counselors to give us guidance. We took a barrage of aptitude tests. They looked over the results and said I had an astronomical mechanical aptitude and really should go to a technical college. Okay. I tried for MIT, but they laughed at my pathetic grades. RPI wasn't nearly as picky, so that's where I ended up.

When the war started in December 1941 I found out about the attack on Pearl Harbor over my ham radio. The hobby was shut down for the duration that same day. The next summer, instead of taking my usual vacation in New Hampshire

with my grandparents, I went to work at G.E. in Schenectady as a test engineer, working on radio transmitters for the Army. The Draft Board let me know that they thought I'd be of more value to the country fighting in a trench somewhere than in sitting on my duff getting barely passing grades at RPI.

My first approach was to try to enlist in the Army Air Force. After all, my father had been in that organization in the First World War, so it seemed logical. Better than a trench. When I admitted to having asthma the Air Force lost all interest in me.

At the time my father was running American Export Airlines, the first transatlantic airline. Back before the War he'd convinced American Export Lines, the leading American shipping line, that they were in the passenger business and they'd better be involved with air transport. They had a whole bunch of cruise ships, mainly going to the Mediterranean. I remember the *Excambion*, the *Exeter*, *Exminister*, *Excaliber*, and so on.

One of his executives was Tom Jones, a retired Navy officer. When the War started Tom was called back to the Navy. One of his friends was Commander Bourne, the head of the Naval Research Lab in Anacostia, D.C. Tom, knowing of my interest in electronics, arranged for me to visit Bourne and talk about my working with his group. He was anxious to have me, but first I'd have to go through the Navy electronic school and learn how radar worked. He arranged for me to be inducted at the Washington Navy Yard and start my schooling at Bliss Electrical School in Tacoma Park, Maryland. When I finished school I was to let him know so he could cut orders for me to join his lab.

A few days later I joined the Navy—one day before I was supposed to report to the draft board in Troy for induction into the Army. Whew! But there was a little problem. The small stores at the Washington Navy Yard was out of uniforms, so they gave me three weeks leave. Besides, they didn't have anything much they could do with me until the next school session started at Bliss in January.

That reminds me of an odd incident. I took the train back to New York to spend my leave at home with my folks. One day my grandmother and I were in Manhattan shopping for Christmas and we stopped off at a Gypsy tearoom on Fifth Avenue for lunch. The Gypsy read my tea leaves and looked at me strangely. She said that for some reason she saw me in uniform—though I wasn't. At that time it was illegal for members of the armed forces to wear civilian clothes without a special permit, so how could she know?

It gets worse. She then said she saw me going into a large building, like a school, and coming out next to the top. She asked if there was a TJ that had had a strong influence on me recently. She said that everything was going to work out fine, but that I would be disappointed over some events which would in the end be beneficial.

Well, right after Christmas I went back to Washington, got issued my ill-fitting uniform, and went to Bliss. There I learned that only the top ranking graduate would get his choice of secondary schools. The options were one in Bethesda (nearby), one in Corpus Christy, Texas, or Treasure Island, San Francisco.

Bethesda sounded great to me. I'd be able to get home now and then on week-

ends, and it wasn't far from Anacostia. Now all I had to do was graduate with the highest grades. Having always just barely skimmed through in school, this was something new to me. The Bliss course was in the fundamentals of electricity, and lasted three months. I enjoyed it and did well, but I missed getting the top grade—by one crummy one-hundredth of a point. Drat! So the next thing I knew I was on a train, heading for San Francisco, just as the Gypsy had predicted.

It was raining hard the day I arrived. The train dumped us in Oakland and we had to take the ferry across to San Francisco, and then a bus to the Radio Materiel School on Treasure Island. I had some interesting adventures while going to school—I'll tell about them some other time.

As the six months of school on Treasure Island was ending I had to decide what I wanted to do next. Should I notify Commander Bourne and go back to Washington and the research lab? Or should I go to sea? In those days I was generally depressed—it wasn't until several years later that I'd find out why that was and work my way out of it. But the result of this was that I figured that married men should be working in the research labs and single men like me probably should be the ones to go out and fight—and maybe die. I wasn't anxious to die, but I didn't care much one way or the other if I did or didn't.

I looked over my options. Since I hated being told what to do or having a boss, my best bet would be to go either for a destroyer or a submarine, where I'd probably be in charge of the electronic equipment. A submarine captain gave a talk at the school, explaining about the sub service. It sounded okay to me, so I volunteered. You get extra pay and good food—what's wrong with that? He hadn't bothered to explain that the submarine service had the highest percentage loss of all the branches of the armed services, but even if he had I wouldn't have been deterred. In a submarine you either came back whole or you didn't come back at all. None of that missing arms and legs stuff which had characterized the First War.

So one Friday I reported to the dispensary for my physical exam for submarine duty. I didn't see where that should be any problem. Many of the other volunteers were worried about the eye exam and were busy memorizing the eye chart, just in case. So I memorized it too—DEFPOTEC was the 20/20 line. Backwards that was CETOPFED. I could do it with my eyes closed.

When my turn came the doctor looked at me and said I was disqualified—overweight. I didn't give up that easily. I pushed to find out how the hell much overweight I was. He grumbled about this, but I persisted until he looked it up. I was seven pounds over the limit. Okay, suppose I come back Monday morning seven pounds lighter, will I be accepted then? He said sure.

When I got back to the school I reported that my physical wouldn't be finished until Monday, and then I got started. I didn't eat or drink anything from that moment until after reporting back Monday. I spent Saturday morning going over the obstacle course for several hours, and then ran several miles on the "grinder," an old landing strip we used for marching exercises. In the afternoon I went to San Francisco and found a steam bath. I sweated all that night and the next morning, staying over night on a bed they had there. Yes, I did have to fend off some homosexuals. Then it was back to Treasure Island and the obstacle course again.

On Monday morning I reported to the dispensary eight pounds lighter. I'd done it! The doctor weighed me in amazement, and then said my weight was okay now, but I was still being rejected for submarine duty because I had flat feet. Well, I'd always had flat feet, so what did that have to do with submarines? I was furious as I went back to the school.

When I reported in they asked me if I'd passed the physical and I said I had. A couple of times, when we were under particularly miserable depth charge attacks, I'd get the yeoman to get out my medical records and I'd look at the big red stamp on the cover: Medically Disqualified For Submarine Duty. Heh.

How I made a fortune—by accident

Photography wasn't a popular hobby in the 1930s and 1940s. In Erasmus High School I belonged to the Camera Club, and then, when I went to McBurney School after that, I joined the camera club there and spent many nights in the dark room learning how to develop and enlarge pictures. I got pretty good at it.

I was the only one on the *Drum* with a camera, so when we were at rest camps on Majuro, at the Royal Hawaiian, and on Guam, I was busy snapping pictures. I had my own developing tank along, so after five patrol runs I had a big bunch of pictures. The crew all wanted me to have copies made, so when we left Guam in January 1945 for our 13th patrol run I sent my negatives to Kodak Hawaii, with instructions to make 80 enlargements of each. I had a price list with me so I figured the cost of making the enlargements and charged everyone my cost on the deal.

When we got back to Pearl after our patrol run I got permission to go into town and pick up the photos. It was a big package. The only problem was that instead of making 80 enlargements of each negative, they'd made one enlarged negative and 80 contact prints of each. I had all my pictures, and well over \$1,000 in cash left over that I hadn't planned on. Since everyone was delighted to get the sets of pictures I didn't think it was terribly important to bring up a possible refund. Later I invested the money in a painting, so I still have the results of that bonanza hanging over my fireplace.

Later, when I started publishing a *Drum* reunion newsletter, those old photos came in very handy. I guess my greatest disappointment was not being able to get my old shipmates to write about the things they remembered from our year or so together as a team. Most of the stories here were first published in the newsletter in 1977. That was 33 years after our adventures together—now we're celebrating 50 years.

Commander Green

When the war ended while I was teaching electronics at the Submarine Base in New London, the Navy discovered they'd made a little mistake. All of their electronic technicians were in the Naval Reserve. They hadn't allowed them to be in the regular Navy. This meant that all of the technicians would soon be discharged. Oops.

The commander of the base called me in and explained that I had been doing a great job of teaching and that he'd like me to stay on instead of being discharged. He could guarantee me a Lt.jg commission. I thanked him, but said no.

The next day he called me in again. He could get me a full Lieutenant's commission. Nope.

A week later I got another call. This time he had an okay for a Lt. Commander's commission, if I would stay and teach. I was beginning to enjoy this, though I had no intention of staying in the Navy, no matter what was offered. I wanted my freedom, not a niche in the naval bureaucracy.

When my points for discharge came up I got out.

Sure, if I'd stayed in I might have eventually gotten command of my own submarine. In peacetime? For what? What a waste of a career.

When I got a chance to go for a cruise on the nuclear *Drum*, SS667, I was dismayed at how old the electronic equipment was. Pathetic. If I'd stayed in the Navy I'd have had every admiral furious with me for pushing to have our submarines with state-of-the-art radar, sonar, and communications equipment.

Did I tell you about the time off the coast of Okinawa when I got the idea of trying a new underwater communications system? I knew that some experimenters had been having success in feeding audio signals into the ground and then picking them up at some distance. Hmm, that ought to work under water too. So I connected the output of an audio amplifier through a transformer so the impedance of the water could be matched and fed the signal to two of my VHF antennas, one on each end of the conning tower.

Every submarine within miles heard my short test. It worked! As far as know this technology never got developed. Maybe no one else thought of trying it.

How'd I get into electronics?

Mostly I can thank my grandfather Tully...my mother's father, known as "Pop." I spent my summers with him and my grandmother, Netta ("Ma"), at their summer cottage in Bethlehem, New Hampshire, where they had a 150-acre "farm." Well, it had been a farm in the 1800s. Great big old barn, well over a hundred years old. But then most of New Hampshire was farmed in the 1800s. That's why you'll find old stone walls running through almost all of today's forests.

Pop was an inventor. A successful inventor. For instance, when he worked for the Garland Stove Company he invented and patented the first gas stove thermostat. Later, in 1909, when he was working for the electric power company in Denver, an old school buddy of his from Ohio State, Henry L. Dougherty, visited him. He'd inherited some money and a factory in Brooklyn (NY), and wanted to go into business. He proposed starting The Improved Appliance Company. Pop would invent improvements on products and Improved would manufacture and market them.

So Tully, Netta, and my mother (then nine years old) moved from Denver to Brooklyn. The business did very well and Dougherty started investing the profits in oil. This was when cars were starting to look like they had a future and Dougherty

knew they'd need gasoline. That's when Cities Service Company got started...now known as Citco. Maybe you've seen the Cities Service building in New York.

Tully retired a wealthy man in the 1920s. He bought the farm in Bethlehem in 1920 as a summer refuge for Netta, who had hay fever and asthma. Then came the stock market crash in 1929. Pop had a couple million dollars worth of stock...over a million of it in Cities Service. That's like about \$40 million or so today. By 1935, when he died, his stock was only worth \$3,500.

He and Netta had been on a European tour when the market crashed. When they got back Pop had to start over again. It never seemed to bother him. An uncle of his out in East Brady, Pennsylvania, called him. He'd developed a new carbon-based brake lining and wondered if Pop might like to distribute it on the East Coast. Pop drove out, took a look, loaded up his Hupmobile to the scuppers and headed back to Brooklyn. By the time he got back he'd outsold all of his uncle's other distributors. Rex-Hide brake lining. The only downside was that it never wore out, so garages could only sell one brake re-lining job, where with other brake linings they had a sale about every 10,000 miles.

Rex-Hide?

That's right, you've never heard of Rex-Hide brake lining. So what happened to this outstanding product? How come it disappeared?

It was the war that did it. This new kind of brake lining was made out of rubber and carbon, and molded into shape to fit the drums of specific car models. It was extremely hard and didn't wear out. But it did cost more than the older and softer brake lining, so Rex-Hide never was able to get any of the car companies to put it on new cars. They didn't figure that customers would be willing to pay more for a car up front just to save money later on relining the brakes.

Then, when the war started and the main source of rubber, Maylasia, was cut off, the War Production Board cancelled almost all civilian products using rubber. And that included Rex-Hide brake linings. It also included the Rex-Hide tire flaps, which I've told you about. The WPB had to back off on the tire flaps, but they wouldn't on the brake lining.

At that time synthetic rubber was still a laboratory dream and the Army needed a zillion tires for their trucks, Jeeps, and so on. The OSS (CIA) set up the Rubber Development Corporation in Brazil with plans for rubber tree plantations there. I happened to know about that because one of the men working for my father was called back into the OSS when the war began and he was deeply involved in the secret project. They bought the Hallicrafters SX-24 radio I had used for my ham station for use in Brazil. Well, I couldn't use it for the duration, and they'd probably have better receivers by the time the war was over (they did, I bought an SX-28A).

It took quite a while after the war before rubber was again available. By then the Rex-Hide brake lining distribution system was gone, and there had been some improvements in the brake lining being put into new cars, so brakes no longer had to be re-lined every 10,000 miles. No more Rex-Hide.

The move to Brooklyn

In 1933 my folks and I moved into the Brooklyn house with Ma and Pop. Dad had been the passenger manager for Luddington Airlines in Washington, D.C. When Tommy Luddington and Amelia Earhart, the owners, sold the airline to Eastern Air Transport, Dad got together with Jim Eaton, the ex-Luddington president, to start Marine Airlines, a seaplane-based airline operating between downtown Boston and Manhattan.

Pop was running his brake lining distributorship out of the house. The cellar was packed solid with inventory and the office was in one of the bedrooms. So I had to live up in the attic. I had a small cot in amongst the trunks of old clothes. There was no insulation or even a ceiling, just the roof and shingles, so it was bitter cold in the winter and stifling hot in the summer.

I had a great rapport with Pop. Summers at the farm he showed me how to do all sorts of things...like dowsing, and showed me which stars were which. He was interested in just about everything and shared these interests with me.

My mother used reasoning to teach me and my father used the razor strop. Or, if I didn't please him at dinner he'd knock me off my chair into the corner and kick me a few times. He drank a lot and there were daily fights with mother, who he'd also knock down. I was never able to sit and talk about anything with him...even to the end.

My depression

It wasn't until recently that I read a research paper that explained my depression. A team at the University of New Hampshire did a thorough study of the subject and found a direct correlation between teenage depression and suicide, and parental punishment. My father had the theory that if he hurt me badly enough I would not repeat my transgressions. What it really did was alienate me from a very early age. You might call it hate.

I remember when I was three years old and I came down stairs one Sunday morning before my folks were up. There was a big plate full of home-made doughnuts on the kitchen table so I ate a bunch. When my father got up and saw what I'd done, he grabbed me and his razor strop, and vented his anger. And that's the way it went. Meals were a terror for me, never knowing when I'd be knocked off my chair.

So, like other kids in that situation, I was depressed. By my teens I was thinking of suicide. At times I was so depressed I didn't even care if things would some day get better.

A few days after high school graduation one of my best friends, Ivan Rettenberg, stuck a shotgun in his mouth and blew his head off. I knew he had a very strict father of whom he was terrified.

It was this depression and general lack of interest in living that helped decide me to volunteer for submarines. Now and then I'd even get to thinking about how

easily one person could sink a submarine.

My general depression continued until, when I was 27, I read an article in *Astounding Science Fiction* (now known as *Analog*) about a new theory of how the mind works. It was called Dianetics. The magazine had fabulous fact articles, which I still enjoy more than the fiction stories. The editor was John Campbell Jr, whom I later got to know quite well.

The article proposed a new explanation of how the mind worked. It made a lot of sense. At the time I was working as an engineer-announcer at WSPB, a radio station in Sarasota, Florida. I bought the book and read it. The book made even more sense than the magazine article. It was written by L. Ron Hubbard, a well-known science fiction writer. But the book was strange. The first half was pure Hubbard and read like fiction. The second half explained how the mind worked and how to repair it. It was like the book had two authors, one a sci-fi writer and the other a scientist.

Book in hand, I got together with Joe, a fellow announcer from the station, and we gave it a try. I'll tell you the fascinating details some other time, but the bottom line was that the results were amazing and I was able to verify the revolutionary theory. I had to learn more about this so I quit my job, despite an offer to give me a couple hours of my own program to do as I wanted and sell my own ads, and I signed up with the Hubbard Dianetic Research Foundation in Elizabeth, New Jersey.

We students were both learning and working on (called processing) each other. Hubbard was there and gave an occasional vague and bombastic lecture. He processed me one day as a demonstration to the class. He was trying to show them how to get rid of the influence of my getting a 2,000-volt shock from my ham radio transmitter. It had knocked me across the room. Hubbard did such a lousy job that he left my mind firmly stuck back when I was about 16.

I wandered around town in a daze for about an hour and then went back to the Foundation and got Paul, one of the Foundation officials, to rescue me. It was a really weird sensation. Paul brought me back to present time and explained that Hubbard really didn't know very much about using Dianetics. He'd admitted to Paul that he'd found the manuscript for it in an Army hospital during the war when some chap who'd written it had died. It looked like good stuff so he called it Dianetics and concocted a story about how he'd developed it, complete with a fantasy about a bunch of people he'd processed using the therapy and turned into what he called "Clears." His Clears had perfect memories and no psychological problems. They were enormously intelligent, and so on. Superpeople.

When I arrived at the Foundation I asked if I could meet a Clear. I got the run-around and a lame story about their being busy. Well, I soon learned that there never were any Clears outside of Hubbard's imagination. While I was at the Foundation I got to be extremely good at using the Dianetic therapy. And the other students helped me. Six weeks later, by graduation time, I'd erased the effect of all of the beatings my father had given me, plus a raft of other traumatic events which had been keeping me down. My depression was gone.

I'll have to explain some time what it was like. For the first time in my life I

was aware of myself as a person. I even had a different voice. And my level of awareness was amazing. I could be in a room with several groups talking and hear all of them clearly and distinctly. I knew what the Indian gurus meant about feeling at one with everyone and everything.

From that time on I stopped drinking. I found it lowered my awareness. And I started reading books. Up until then I'd read a few...maybe two or three books a year, mostly fiction. From then on I was reading ten times as many. Now I've got around 6,000 books in my library and I'm still reading several a month, plus around a hundred magazines.

Hubbard got very upset over the success of Dianetics and wanted to change it so it was more his creation. He also ran into problems with his graduate Dianetic Auditors going out and doing unlicensed psychotherapy. Worse, Dianetics ran circles around any other known therapy system. It could do in hours what the others were hoping to do in years. He changed it to a religion so his Auditors could legally give religious advice and counseling instead of therapy. He also used reverse Dianetics to brainwash people in his cult. Unfortunately most of the therapy we learned and the techniques we developed at Elizabeth never survived the transition.

This new approach worked well for Hubbard. He made billions from Scientology. He died a few years back, where I understand he was living in seclusion near San Luis Obispo, California.

I've been intending to write a book on how the mind works and how to repair it...going back to the original Dianetic theory and including all the things I learned at Elizabeth and in practice later. I believe that 90% of the problems people have can be quickly and easily solved. Phobias, personality problems, addictions, plus a surprising number of chronic illnesses.

Once I was free from the bad baggage of my past, my life changed. I read the book in the summer of 1950, went to the Foundation that fall, practiced that winter, then went to work as an engineering project coordinator for Airbourne Instrument Laboratories. Then I went to WXEL in Cleveland as a TV director. I got fed up with that, moved back to New York and started a loud speaker manufacturing company based on a new microwave antenna patent I'd come across at Airbourne Instrument. Within two years I'd parlayed \$1,000 borrowed on my car into a million-dollar business. And in my spare time I was researching and writing about digital radio communications. I started my first publication (on digital communications), in June 1951.

As far as I know, no one is doing Dianetic therapy any longer. It's a lost art. I was busy with my publishing in the 1960s and only got involved as an Auditor when a Dianetic professional needed help with his or her own case. But they're all gone now...and I'm getting well on in years too.

I hate to see a therapy that runs circles around anything in use today get lost. There isn't anybody that couldn't be helped with this therapy. It even raises IQ substantially. When I explain how to do it, I'll also explain why it raises IQs. It's logical.

Considering what Dianetics has done for me, I suppose I should have thanked my father for abusing me the way he did. That created the depression which got

me involved with Dianetics. It also got me on the *Drum* for five interesting war patrols.

Now let's get back to how I got involved with electronics.

The Sunday-school curse.

One Sunday my best friend Alfie and I were in Sunday-school at the Dutch Reformed Church in Brooklyn. I was a freshman in high school. I was 14 and this wasn't long after Pop had died. He had been a heavy smoker. Cigarettes, cigars, a pipe. He was only 57 when he died of pneumonia.

Someone brought a cardboard box of old radio parts to church and gave them to Alfie. It was a random gift. The chap hadn't known what to do with them and figured maybe a kid might have some fun. Alfie looked disdainfully over the stuff and asked if I wanted it. You bet!

I started looking at the radio construction projects in *Popular Mechanics* and found one that used the same kind of coils and tuning capacitor that was in my parts box. I took one of Pop's old cigar boxes, followed the schematic, and built a radio. The box of parts was turning point number one. When the radio worked, that was number two.

Since the parts came to me in church I assume that the chap who donated them was an angel, providing that little kick at the right time in my life. A devil wouldn't have done this in church, would he? That kick got me to join my high school radio club, where they mercilessly pushed me to get my amateur radio license. And that got me into a polytechnic university, and then into the Navy as a Radio Technician 3/c.

So what am I doing here?

Here I am, spending my days and nights bored silly, sitting in a football-field-long piece of sewer pipe, with the goal of killing a lot of Japs and hoping they don't kill us first. Eight hours a day on watch. Eight hours sleeping. And eight hours playing double pinocle. How'd this happen?

No goals. I think that had a lot to do with it. Between a father who I feared and hated, and an artist mother who was busy with her own interests and problems, I'd never had much guidance. I'd never even thought much about the future. I just went along with the same schedule all the other kids had and waited for things to happen.

My mother's father, "Pop," had been a good role model. He got me interested in things like glass blowing and listening to police calls just above the broadcast band. But he died when I was 13, just a little over a year after we moved from Washington to live with my grandparents in Brooklyn. This was at the depth of the depression in 1935.

Serendipity was guiding my life. That box of radio parts and the radio I built from them changed my whole life. That got me to building more radios, amplifiers, and electronic gadgets. I started listening to the short waves and discovered

amateur radio. I joined my high school radio club and eventually got my ham radio license. When I graduated from high school, I had no idea of what to do next. Oh, I might go to Dartmouth and go into law. But I had no real interest in it. My interest was in electronics and radio, so it wasn't difficult for my high school advisors to convince me to go into engineering. Pop had been a mechanical engineer, but that was way before electricity, back around 1890.

I was in my second year of college when the war started. I remember hearing about the attack on Pearl Harbor from a blind ham friend of mine in Stacy Basin, New York. That same day we were put off the air by the FCC. How could I have even imagined that within a year I'd be in the Navy, and in less than two years in Pearl Harbor aboard a submarine?

What do sailors talk about?

Women and sex. Not much else.

Fry, our cook, had endless stories to tell once we hit San Francisco. His twin brother was serving on an aircraft carrier and it was in port at the same time. Claude C. Fry and Clyde C. Fry out on liberty together! Watch out girls.

They got endless delight from fooling girls that they picked up in the bars. Fry used to brag about how he could keep right on going through three or four orgasms without stopping. His brother had the same ability. Here's how they'd work their scam. Clyde would go into a bar and pick up a girl. They'd have a few drinks and then go to her apartment, which would usually be nearby.

You got the picture yet? Well, when Clyde would finally tire he'd excuse himself to go to the bathroom. He'd then let Claude in and he'd duck out. Claude would come back from the bathroom and carry on...amazingly refreshed. They set some legends. One time they switched back and forth three times, leaving a totally worn out (but very happy) girl.

The crew was concerned about my being a virgin. They weren't judgmental or superior about it, they just wanted to be helpful. A couple said that their girl friends were anxious to meet me and remedy the situation.

Now, how did I get to be 22 and still a virgin? Bad timing. Ultra bad timing. I went to high school in the 1930s, a time when sex was almost unknown amongst high schoolers. As far as I knew there was only one guy in my high school who'd ever had sex. Well, he claimed to have had sex once, but he wasn't very convincing about it. When we got together a couple years ago he admitted that he'd exaggerated.

I went to a co-ed high school for my first two years and then transferred to a boy's school for the last two years. No girls. Well, almost. I did go to a dancing school in downtown Brooklyn and met girls there. But I was terribly shy, so I didn't know what to do about it.

Ouch. All those memories of sitting timidly on the couch in Martha-Jane's living room after I'd taken her home from dancing class, trying to work my hand around so I could touch a breast. I went out with a French girl from dancing class once, but I was so nervous I could hardly talk. Wow, a French girl! And everyone

knows about the French and sex.

When I went to college I invited Martha-Jane to come up for the prom weekend. I had to pay her way up on the train and for her hotel room. After the dance we went to her hotel room...and sat on the bed. I had high hopes. And high panic. Martha-Jane said no, to go any further could hurt our relationship. I was willing to chance it. Very willing.

But she was right about the relationship. Sort of. I didn't have to bring a girl all the way from Brooklyn to miss out. I was perfectly capable of doing that with the Troy girls. And I did.

Rensselaer was a boy's college. No girls until after the war. So there wasn't much opportunity to date. The school kept us so busy at night memorizing irrelevant data for exams that there just wasn't much time to pursue girls. In those days not many college boys had cars, which made dating even more difficult. I started college in 1940, so by the time the war started in 1941, I was nineteen and in my sophomore year.

At the end of my freshman year I joined Phi Epsilon Phi. About the only guys that didn't get pledged to a fraternity were the geeks that none of them wanted. They had to live in the upper-class dorms, across the street from the freshman dorm quadrangle.

Oh, not that there wasn't plenty of opportunity for sex for the non-chicken. Cluck. Troy was famous for its whore houses. Men would drive from hundreds of miles around. At first I wondered at how many men were going through the used record store down by the railroad tracks on Sixth Street. I would go in to buy records for 5¢ each. They were only worn on one side from juke box use. The used record store was just a front.

There were houses for every pocketbook. The classy ones, down near the police station, charged \$5. The \$2 line was the most popular, and were all over town. But there was entertainment for the poor too, with black women available for 50¢ down along the railroad tracks.

My fraternity house was on 8th Street, so on weekends there would be a small pilgrimage by three or four of my more worldly brothers. We had one chap we called Chewsie...mainly because he wasn't. He'd go to bed with just about anything. Chewsie Hanson.

I'd estimate that no more than a half dozen of my fraternity brothers were "experienced." And, oddly enough, I don't recall they're ever putting any pressure on the rest of us. None of the macho stuff. That was the same attitude I ran into in the navy. Being known as a virgin wasn't an embarrassment in those days. It wasn't anything brag about either.

The first time!

At the urging of my shipmates I decided it really was time to cross the bridge. To get laid. Sigh. Lotta pressure. So I headed into town and the good old Irish bar. When I got there I spotted a gal that I'd seen there before. Passably attractive, though seriously overweight. I went up to the bar and nervously offered to buy her

a drink. We moved to a table and had five or six more. I haven't a clue as to what we talked about. Along about 11 pm she suggested we go to her hotel room. Gulp! We stopped at a nearby liquor store and I bought a bottle to take along. I needed fortification.

As we went through the small hotel lobby past the night clerk my gal asked me what time I wanted to get a call. For some reason, having struck out without fail in the past, it suddenly dawned on me that this was *it*! I still remember the slow ride up the This Is It elevator. Jee-sus, this is it!

When we got into the room I opened the bottle and poured a couple drinks. We went into a clinch and I got a lot of friendly tongue. I was obviously excited. I was also indescribably apprehensive. Wow, at last! She took off her clothes and jumped into bed. I got out of my tailor-made blues and pole vaulted into bed beside her. I almost ripped the 13 buttons off the pants getting undressed. One button for each of the original states. Makes one appreciate the invention of the zipper.

As soon as I hit the bed I went totally numb from the waist down. Complete anesthesia. She could have stuck a pin in me and I wouldn't have felt a thing. Panic had taken over. She wasn't about to be stopped by a little problem like that, so she climbed on top of me and wiggled around until I ejaculated. I didn't feel a thing. No orgasm. No pain. Just panic.

In the morning I left her some money and headed back to Hunter's Point Shipyards, where our boat was being refitted. We were living in barracks while the boat was in dry dock. There was a cheer when I came in at 6 am. I'm afraid I didn't tell all the gory details, but at least I'd lost my "cherry." Maybe it would be easier next time.

The whole business had been made such a big deal for so many years, that there was no way I could be relaxed about it. It took me another year before I tried again. I've really got to tell you about that some time. That was hilarious. In retrospect. But this is a story about my days with the *Drum* and not a history of Wayne Green's sexual misadventures. The "first time" happened while I was attached to the *Drum*, so that's fair game.

Yes, I ran into her in the *Irisher* again a few nights later and she was very friendly. But I didn't want to go through that again right away. Besides I was wondering whether I might have caught anything or not, and was waiting anxiously for any possible unwanted developments.

I remembered the time we left Honolulu on patrol and several of the crew had to wash down with diesel oil to kill the case of crabs they'd brought back with them. The bunks on a submarine are very close together. There was one inches away to the left of me, another across an 18-inch aisle, another 18-inches above me. No problem for crabs.

Indeed, one night I felt something strange and found something weird burrowing into my you-know-whats. I squeezed it out and the damned thing looked exactly like a miniature crab, waving its claws at me. I rubbed on some camphol phenique and checked carefully for several days after that, hoping not to find any more visitors. I had no interest in the washing off with fuel oil routine. No more visitors turned up.

Paperbacks

Every now and then a carton of Armed Services Edition paperbacks would arrive. There was no rush to grab them. And we had no library. Reading wasn't much of an interest to this cross-section of American society. So I pretty much had my pick when a box of books was delivered.

The books were virtually all fiction. They varied in size from 4" x 5.5" x 3/8" for a Robert Benchley book to 4.5" x 6.5" x 3/4" for the *Selected Short Stories of Thomas Mann*. One odd thing about them was that unlike today's paperbacks, they were printed sideways, with the long dimension horizontal. Thus they had two short columns on each page.

One of my great regrets is that I didn't get really interested in reading (and writing) earlier in life. Like most people, I wasted huge gobs of time I could have spent educating myself. Alas, there's no way to make up for time that's been wasted. I just try these days not to waste more than is absolutely necessary. I'll bet I have at least 50 books I'm reading right now, and I know there's another dozen I've ordered waiting at Barnes & Noble in Nashua to be picked up.

The time I spent tinkering with electronic projects was golden, but most of my spare time at sea was spent playing pinochle. This was natural for me because my family all played cards in the evening. No, they didn't read, either. Family life in the 1920s and 30s meant the man of the house being away at work, the woman keeping the house clean and cooking meals, and nightly card games.

Games were one way I was able to co-exist with my father. We played Double Solitaire, Russian Bank, Casino, Pounce, Gin, Cribbage, Lazy-Eights, Up And Down The River, Hearts, Michigan, Acey-Deucey, High-Low-Jack, and (of course) Monopoly.

We had radio for entertainment, but other than *Amos and Andy*, we didn't listen as a family semi-activity. My grandparents and my folks "entertained." This meant having friends in, sitting around in the kitchen drinking, while my folks made dinner. Then we'd all eat and talk. Then the table would be cleared and we'd all play a game.

Once we moved in with my mother's folks there were nightly Bridge games, with friends invited in to make two tables. Pop would dash down the cellar when he was the dummy and do some work on a project. He had quite a workshop set up.

For instance, when it turned out that his brake lining was so hard that it quickly wore out regular drills he bought a bunch of drills and brazed in carborundum tips so they'd last. He sold these to the garages selling the Rex-Hide brake lining. So, while he was dummy, he'd braze in another drill tip.

Raised with this background I spent much of my submarine spare time playing games. Since I'd never learned Pinochle, I went for Cribbage and Acey-Deucey. They had tournaments for all three games. The first two patrol runs I won the Cribbage and Acey-Deucey tournaments. Then I learned to play Double-Pinochle on my third run and won all three tournaments. That was the end of the tournaments.

If the war hadn't come along, I suppose I would have followed the family pattern and gotten married, had a kid, entertained friends and played games until death us do part.

In the 1930s they came out with Big-Little Books for kids. They were 25¢, a little smaller than today's paperbacks, and thick. I had a bunch of them, but my father must have given them the heave-ho. They didn't turn up when I cleaned out the family attic after he died. But they were just kid's books.

One book that I really enjoyed in the Armed Services series was *The Laughter of My Father* by Carlos Bulosan...a story about life in a small Philippine village before the war. It's a shame that wonderful books like this are now essentially lost to the kids today.

Another wonderful book was *My Family, Right or Wrong*, by John Philips Sousa III.

I did read about everything Benchley, Thurber, and Parker wrote. But, readingwise, I mostly threw away my four years in the navy.

During the six months I spent on Treasure Island at the Radio Materiel School, I spent most of my spare time playing poker. I did well enough at this so I didn't have to draw any pay for the whole six months, and made enough to buy tailor-made uniforms and go out on liberty in San Francisco every weekend. That was one of the benefits of my years of playing games. I found that a good poker player could make a steady income, even with nickel and dime pots.

I got so involved that I'd often skip going to chow, making do with a couple of candy bars and thus getting in an extra hour of poker. It was fun and profitable.

Another skill I developed was with the pinball machines in the Ship's Service. They had two hockey game machines, side by side. The idea was to get the balls past the opposing goalie. I practiced for a while and got so I could win every time. Then I tried doing both machines at the same time. That took some coordination, but I got to where I was making perfect scores on both.

Good, but not perfection. I then started doing one machine behind my back, spinning my goalie in one direction or the other just by the sound of the ball. I ended up being able to work both machines at once behind my back and getting perfect scores. Idiot savant?

My \$50,000 foot

One night late, as I was staggering back to the barge at Hunter's Point where I was living at the time, I stumbled. Yes, I was drunk. It had been quite an evening with my crewmates. About a third of us had been transferred off the *Drum* and into a relief crew group. The rest had moved back aboard the boat and were getting ready to sail in a few days. The relief crew had been moved from the barracks to a barge.

It was a dark night and as I was stumbling along under an overpass on a cobble-stone area, one of the stones was missing and my foot slipped into the hole. I fell. My foot hurt, but not so badly that I couldn't limp on back to the barge and go to bed.

The next morning I went to get up and discovered a new meaning for pain. Even my skill with the navy's rich language of expletives was unable to cope with this. I somehow managed to put on my dungarees and hop to the dispensary.

A couple of x-rays later I got the verdict... a broken third metatarsal bone. The doctor, who was a ham, set the bone and put on a cast which went up above my knee. I spent a few days in the hospital. Fortunately my mother had sent a couple of H. Allen Smith books I'd asked for and they arrived in time to make my hospital time less boring. There's nothing like some great humor books to make pain more endurable. I laughed my way through his *Life In A Putty Knife Factory* and *Lost In The Horse Latitudes*. Then *Low Man On A Totem Pole*.

Once they let me out of the hospital I found the leg cast and a crutch to be a real nuisance. Bus drivers wouldn't stop for me because they knew I'd be slow in getting into their bus. One night I decided to go to the next barge. It was only about a two-foot jump between the barges. That's when I discovered that it isn't easy to jump two feet with one leg and land on the same leg. I damned near fell into the water between the barges, and with that lousy cast on my leg I'd have gone down like a brick.

That's also when I discovered how much easier it is to shave when you do it in the shower. The shower softens up the skin and makes shaving a dream. I've shaved in the shower ever since. It also saves time. A shower, shave, and shampoo, complete with drying after, now takes me less than ten minutes a day. That adds up to many hours of extra reading or working time every year that most men don't have. If I only save 10 minutes a day, that's 60 hours extra a year. Times 50 years. 3,000 hours.

The following year, when I was discharged, my foot still was painful to walk on, so I got a 10% disability pension. I'm still getting it. And yes, I have to be careful. The bone didn't mend right and my foot still hurts at times. Sometimes it's fine. At others I'm limping around like the old codger I am.

Well, I never had much interest in running anyway. I got fat when I spent one summer at the farm when I was thirteen eating my grandmother's pies and cakes. And I stayed various versions of fat from then until I was 50 and decided once and for all to diet and stay dieted. I took off 85 pounds over an eight-month period and have kept it off ever since. No, I don't feel much better. And yes, I sure miss being able to tackle a pint of Breyer's vanilla ice cream topped with a small can of crushed pineapple. Sigh.

Ice cream. At the end of each war patrol, when we'd tie up next to the sub tender, there would be a parade of sailors bringing goodies for us. A crate of tomatos, ice cream, our mail, and our pay.

Some of the fellows got on pay line first. Others went to the other end of the pay line to collect debts. I went to the ice cream container in the crew's mess and dug in. I had no problem dealing with at least a quart. I loved vanilla ice cream with canned fruit cocktail on it. Then, just a little fatter, I went to the pay line. First things first.

I'd never liked tomatos much. My grandmother ate 'em with vinegar and sugar on 'em. I hated anything sour, so that was out. But when I saw how much enjoy-

ment my crewmates were having eating tomatos with mayonnaise, I tried it. I became instantly addicted. Fortunately it's almost impossible to buy decent-tasting tomatos any more, so I don't have to wrestle with my conscience. During the local tomato season I always have a string of 'em on the window sill ripening.

My friend Rod McKewn (the poet) sends me a mercy box of his home-grown tomatos now and then. Fabulous. And Sherry, inspired by a visit to Epcot Center and their hydroponic exhibit, is setting up her own hydroponic garden in a room just off the kitchen. As near as I can figure, those tomatos will cost about \$10 each just for the damned electricity and never mind the thousands of dollars in equipment and daily care it takes. They sure better be good.

After our eleventh war patrol they installed an ice cream machine. From then on I was able to make ice cream whenever I wanted...and share what I couldn't eat with the crew. Sometimes I'd even bake a cake to go with the ice cream. Hey, it was a tough life.

In addition to our three meals a day, plus a midnight snack for the watch, we could eat any time we wanted. But I was the only one in the crew that had any interest in cooking. For the rest of them the extent of their culinary skills extended to opening a can of sardines.

My father's father (F.E.) cooked. My father cooked. I cook. I love to cook, and I have some great recipes I occasionally share with my 73 readers.

Epilog

Submarines were critically important to our winning the war with Japan. We sank their supply ships, cutting off their oil and other raw materials. We cut off the supplies to their troops everywhere.

But it was largely a war of technology, with radar as one of our most important tools. If the Japanese had been able to develop radar for their ships we wouldn't have been able to sail on the surface right down through the middle of their convoys, firing torpedoes left and right as we went, with us knowing where every ship and escort was at every minute and they're not having a clue to our location. In the land of the blind the man with eyes is king.

I am thankful that "fate" somehow arranged for me to be up there in front, both on a submarine sinking Japanese ships, and as an electronic technician, maintaining and operating our radar and sonar equipment. Twice I was the right person in the right spot at the right time with the right training and presence of mind to save the boat. Not many people have such a gift given them.

We still have much to learn about serendipity. I don't know yet how these things work, but we do have a world of anomalies which are nudging us toward an understanding. Every now and then the curtain parts a little, letting through some rays of light.

There are a couple of excellent books on serendipity reviewed in my *Secret Guide to Wisdom*, a \$5 review of books you're crazy not to read. There are so many avenues still open for pioneering that I get discouraged when I see people wasting their lives on entertainment instead of at least spending some of their time

helping us to better understand life, consciousness, and our world. My book guide will help open minds, if only I can get people to read. And the mind is like a muscle, you either use it or you lose it.

Then there's my *Secret Guide to Health* which explains how anyone can recover from virtually any illness, plus add another 30 to 60 years of healthy living to their lives. This amazing discovery by a few doctors is the biggest secret in the medical industry and could, if enough people find out about it, cut our health care costs by around 80% and totally destroy the Social Security sham. It could put most of our nursing homes out of business too, plus an awful lot of hospitals and doctors.

My third book, the *Secret Guide to Wealth*, explains what a con job our schools and colleges are, and how anyone with the guts to follow my instructions can become a millionaire within seven years. Five, if they really want to.

Yes, I understand how preposterous my claims for health and wealth are. They go against everything we've been taught to believe. But, as you read my books you'll see that everything I write make good sense, and is backed up with reliable references. If I can get you to read my wisdom guide you'll be introduced to the books which will give you a better understanding of the school and medical industries.

Beyond my hope to get you to stop being unhealthy and unwealthy, I have a much greater plan—one where I need your help. My publications have helped us have cellular telephones, personal computers and compact discs. All are now huge industries. But my next plan dwarfs all of that. All I want to do now is enlist your help to make our country what the founders envisioned, and then to change the whole world.

You are going to like my plans for re-inventing schools and colleges. You're going to love my plans for cutting our government down to the absolute minimum we need and out of the expensive and failed social engineering business. A hundred years ago our government cost us 2% of our wages to support. Now it's over 50%. Well, we can get it back to 2% and then export what we've accomplished.

But I can't do much with a brainwashed, poor, sick population which is more interested in entertainment than even life itself. We've been seduced by sports and TV, while our pockets have been picked by the crooks we keep blindly reelecting to Congress. Will I be able to convince people that there are more important things than ball games? Probably not, but it's worth a try.

I hope you'll read my books and then get others to read them. I hope you'll try to get me on as many radio talk shows as you can so I can get my message to more people. No, most won't believe me, but even if they do, they won't have the guts to make the changes in their lives it takes to live healthier and wealthier.

.....Wayne

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